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Graduate School
1979–1980

May 1979

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# University of New Haven

## Graduate Bulletin
## 1979–1980

**Main Campus:**

300 Orange Avenue
West Haven, Connecticut 06516

This bulletin supersedes all previous bulletins, catalogs and brochures published by the Graduate School and describes academic programs to be offered during 1979–1980. Graduate students admitted to the university in the fall of 1979 and thereafter are bound by the regulations published in this bulletin.

The University of New Haven is committed to affirmative action and to a policy which provides for equal opportunity in employment, advancement, admission, educational opportunity and administration of financial aid to all persons on the basis of individual merit. This policy is administered without regard to race, color, national origin, age, sex, religion or disabilities not related to performance. The university is authorized under federal law to enroll nonimmigrant alien students.

The university reserves the right to make, at any time, whatever changes in admission requirements, fees, charges, tuition, regulations and academic programs it deems necessary prior to the start of any class, term, semester, trimester or session. The university reserves the right to divide, cancel or reschedule classes or programs if enrollment or other factors so require.

**Bulletin of the University of New Haven, Volume II Number 6, May 1979**
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# ACADEMIC CALENDAR 1979–1980

## Graduate School

### 1979–80

**SUMMER TERM:** Monday, July 16, to Tuesday, August 28, 1979

| | |
|---|---|
| Fall term deadline for completed applications for admission * | August 1 |

**FALL TERM:** Monday, September 10, to Saturday, December 15, 1979

| | |
|---|---|
| Last day to register | Friday, September 7 |
| Last day to add a class | Monday, September 17 |
| Fall Holiday | Monday, October 1 |
| Last day to file petition for graduation at January commencement | Friday, October 12 |
| Thanksgiving vacation week | Tuesday–Saturday, November 20–24 |
| Winter term deadline for completed applications for admission * | December 1 |

**WINTER TERM:** Wednesday, January 2, to Tuesday, April 1, 1980

| | |
|---|---|
| Last day to register | Friday, December 21, 1979 |
| Last day to submit grades for students expecting to graduate in January commencement | Monday, January 7, 1980 |
| Last day to add a class | Wednesday, January 9 |
| Commencement | Sunday, January 20 |
| Holiday (President's Day) (Monday classes will meet Friday, February 22) | Monday, February 18 |
| Last day to file petition for graduation at June commencement | Friday, February 29 |
| Spring term deadline for completed applications for admission * | March 1 |

**SPRING TERM:** Monday, April 7, to Saturday, July 5, 1980

| | |
|---|---|
| Last day to register | Friday, April 4 |
| Last day to add a class | Monday, April 14 |

* Prospective students completing their applications after this date may register for one term as nonmatriculated students. This registration of those whose applications are in process does not guarantee acceptance.

| | |
|---|---|
| Last day to submit grades for students expecting to graduate in June commencement | Monday, May 12 |
| Holiday (Memorial Day) (Monday classes will meet Friday, May 30) | Monday, May 26 |
| Commencement | Sunday, June 1 |
| Holiday (Independence Day) (Friday classes will meet Saturday, July 5) | Friday, July 4 |

# Undergraduate Day Division

## Summer semester 1979

See calendar for Division of Evening Studies (Undergraduate)

## Fall semester 1979

| | |
|---|---|
| Tuition due | Monday, August 6 |
| Residence charge due | Monday, August 6 |
| Residence Hall opens | Noon, Saturday, September 1 |
| Orientation for first year students | Tuesday, September 4 |
| Classes begin | Wednesday, September 5 |
| Last day to **add** courses | Friday, September 14 |
| Last day to petition for January graduation | Friday, October 12 |
| Last day to **drop** courses | Friday, October 19 |
| Holiday (Thanksgiving) | Thursday–Friday, November 22–23 |
| Classes end | Thursday, December 13 |
| Reading day | Friday, December 14 |
| Final Examinations | Saturday–Friday, December 15–21 |
| Last day of semester | Friday, December 21 |
| Residence Hall closes | 6:00 p.m., Saturday, December 22 |
| Commencement | Sunday, January 20, 1980 |

## Spring semester 1980

| | |
|---|---|
| Tuition due | Monday, December 31, 1979 |
| Residence charge due | Monday, December 31 |
| Residence Hall opens | Noon, Saturday, January 12, 1980 |
| Orientation for new students | Thursday, January 17 |
| Classes begin | Friday, January 18 |
| Last day to **add** courses | Friday, January 25 |

| | |
|---|---|
| Holiday (President's Day) | Monday, February 18 |
| Last day to petition for June graduation | Friday, February 29 |
| Last day to **drop** courses | Friday, February 29 |
| Spring vacation | Saturday–Sunday, March 8–16 |
| Classes resume | Monday, March 17 |
| Holiday (Good Friday) | Friday, April 4 |
| Classes end | Friday, May 2 |
| Reading day | Monday, May 5 |
| Final Examinations | Tuesday–Monday, May 6–12 |
| Last day of semester | Monday, May 12 |
| Residence Hall closes | 6:00 p.m., Tuesday, May 13 |
| Commencement | Sunday, June 1 |

# Division of Evening Studies (Undergraduate)

## Summer semester 1979

| | |
|---|---|
| Registration period | Tuesday–Friday, May 29–June 8 |
| Tuition due | Monday, June 11 |
| First term classes begin | Monday, June 11 |
| Holiday (Independence Day) | Wednesday, July 4 |
| First term final examinations | Monday, July 16 |
| Second term classes begin | Thursday, July 19 |
| Second term final examinations | Wednesday, August 22 |

## Fall semester 1979

| | |
|---|---|
| Registration for current and former students | Monday–Friday, August 13–24 |
| Registration for new students | Tuesday–Wednesday, August 28–29 |
| Tuition due | Wednesday, September 5 |
| Classes begin | Wednesday, September 5 |
| Last day to **add** courses | Friday, September 14 |
| Last day to petition for January graduation | Friday, October 12 |
| Last day to **drop** courses | Friday, October 19 |
| Holiday (Thanksgiving) | Wednesday–Sunday, November 21–25 |
| Classes end | Friday, December 14 |
| Final examinations | Saturday–Friday, December 15–21 |
| Commencement | Sunday, January 20, 1980 |

## Spring semester 1980

| | |
|---|---|
| Registration for current and former students | Wednesday–Tuesday, January 2–8 |
| Registration for new students | Tuesday–Wednesday, January 8–9 |
| Tuition due | Friday, January 11 |
| Classes begin | Friday, January 18 |
| Last day to **add** courses | Friday, January 25 |
| Holiday (President's Day) | Monday, February 18 |
| Last day to petition for June graduation | Friday, February 29 |
| Last day to **drop** courses | Friday, February 29 |
| Spring vacation | Sunday–Sunday, March 9–16 |
| Classes resume | Monday, March 17 |
| Holiday (Good Friday) | Friday, April 4 |
| Classes end | Tuesday, May 6 |
| Final examinations | Wednesday–Tuesday, May 7–13 |
| Commencement | Sunday, June 1 |

# GENERAL INFORMATION

## History of the university

Since its founding in 1920, the University of New Haven has grown from a small junior college to a major, urban, coeducational independent university.

Begun as New Haven YMCA Junior College, a branch of Northeastern University, the college became New Haven College in 1926 by an act of the Connecticut General Assembly. For nearly 40 years, the college held classes in space rented from Yale University. In September 1958, the college completed construction of a classroom building on Cold Spring Street, New Haven, for its daytime engineering building.

That same year, the college received its first authorization from the Connecticut Legislature to offer the Bachelor of Science degree in fields of business accounting, management and industrial engineering.

But though its student body on the new Cold Spring Street campus numbered fewer than 200 persons, the college's facilities were fast becoming overcrowded. To meet the needs of the college and the local community, the Board of Governors purchased in 1960 the three buildings and 25 acres of land in West Haven which formerly belonged to the New Haven County Orphanage. The combination of greatly increased classroom space and the four-year degree program sparked a period of tremendous growth in enrollment and facilities. In 1961, the year after the college moved to West Haven, the graduating class numbered 75. Fifteen years later, that figure had climbed to 1,000.

The acquisition of 28 acres of undeveloped land near the main campus in 1962 made possible the construction of playing fields, tennis courts and a new Physical Education-Auditorium Building. In October

1974, the Marvin K. Peterson Library on the Main Campus opened to students.

New Haven College received full accreditation of its baccalaureate programs from the New England Association of Schools and Colleges in 1966, which enabled the college to work toward the achievement of one of its principal objectives: to provide leaders and professional personnel with an understanding of important cultural and scientific progress, and to encourage students to reach their maximum potential.

In 1969, the college took a major step forward with the addition of the Graduate School. Initially offering programs in business administration and industrial engineering, the Graduate School expanded rapidly. Today, 20 programs and additional courses have pushed graduate enrollment to more than 2200.

## FROM COLLEGE TO UNIVERSITY

On the fiftieth anniversary of the founding of the college, in 1970, New Haven College became the University of New Haven, reflecting the increased scope and the diversity of academic programs offered. Originally founded to meet a single distinct need in the New Haven community, the institution now ranks as a major academic institution offering programs in more than 50 different areas of study. This wide range of studies provides a total educational experience for University of New Haven students.

In the past 19 years, the institution has grown from a small college with 1,000 part-time, undergraduate evening students to a diverse urban university enrolling 9,000 full- and part-time, graduate, undergraduate and special students on the main campus in West Haven and at eight locations around the state.

Today, the university offers some 100 graduate and undergraduate degree programs in five schools: the Graduate School and the Schools of Arts and Sciences, Business Administration, Engineering and Professional Studies and Continuing Education.

Undergraduate courses and programs are offered in West Haven on the main campus as well as on the Mitchell campus in New London and on the Saint Joseph's College campus in Hartford.

Graduate courses and programs are offered in West Haven and in Greenwich, Danbury, Middlebury, Waterbury, Middletown, Groton and New London.

The University of New Haven has continually expanded its course and program offerings. The university adopted a policy for the 1970's which, in part, directed particular attention to the educational needs of the people of the state of Connecticut through programs in both day and evening divisions that reflect the needs of the area and of the times.

## THE FUTURE

Plans for the growth of the university center around the $12

million Campaign for Excellence, a multi-purpose campaign which calls for building construction, the endowment of scholarships, the expansion of library resources, the creation of endowed professorships and for general campus improvements. Counting gifts, bequests and other forms of income, the campaign total has reached five million dollars.

## Philosophy of the university

The basic assumptions and goals which have governed and continue to govern the academic programs and life of the university are: the belief that there is value and virtue in a general education to help students acquire an understanding of society and the place of the individual within it; a conviction that the hallmark of an educated person is a critical mind in the sense of a capacity to test and challenge previous assumptions and new ideas; a strong commitment to the principle that in a complex and technological society a university cannot be insensitive to the need of its students for professional training which will enable them to obtain rewarding and productive employment; and that a higher education must provide students with a breadth of knowledge and a sensitivity to weigh ethical and moral issues and form values and life goals.

Other assumptions and considerations governing the academic programs and activities of the university have been: recognition of the need for students to participate in work and service activities which provide contacts with other aspects of society and in using skills and exercising judgment and responsibility in a variety of settings outside the university community; the importance of allowing full play and scope to the creative abilities and intellectual curiosity of students through opportunities to pursue independent study and investigation; the importance of recognizing the educational interests of students geared toward specific professions and careers as students seek to adjust to changing labor market conditions; and, lastly, preparing students for graduate and professional training beyond the baccalaureate.

## Accreditation

The University of New Haven is fully accredited as a general purpose institution by the New England Association of Schools and Colleges.

Representative memberships in which the university is an active participant include the Council of Graduate Schools, the Northeastern Association of Graduate Schools, the New England Association of Graduate Schools, the Assembly of the American Association of Collegiate Schools of Business, the College Entrance Examining Board,

the American Society of Engineering Education, the Educational Testing Service American Council on Education, American Association for Higher Education, Association of Urban Universities, Council for the Advancement of Small Colleges, and the National Commission on Accrediting. The Engineers' Council for Professional Development has accredited the undergraduate mechanical, industrial, civil, and electrical engineering programs.

## Affirmative action

The University of New Haven is committed to affirmative action and to a policy which provides for equal opportunity in employment, advancement, admission, educational opportunity and administration of financial aid to all persons on the basis of individual merit. This policy is administered without regard to race, color, national origin, age, sex, religion or disabilities not related to performance.

### TITLE IX

It is the policy of the University of New Haven not to discriminate on the basis of sex in its admission, educational programs, activities or employment policies as required by Title IX of the 1972 Education Amendments.

Inquiries regarding affirmative action, equal opportunity and Title IX may be directed to the director of equal opportunity.

# Schools of the university

Undergraduate students at the University of New Haven may elect majors in one of four schools, the School of Arts and Sciences, the School of Business Administration which includes the Division of Criminal Justice, the School of Engineering and the School of Professional Studies and Continuing Education which includes the Division of Evening Studies. Graduate programs are offered through the Graduate School. All schools within the university are coeducational.

## School of Arts and Sciences

The School of Arts and Sciences offers programs leading to the associate in science degree, the bachelor of arts degree and the bachelor of science degree. Through the Graduate School, the School of Arts and Sciences offers programs leading to the master of arts degree, the master of science degree, and the senior professional certificate.

Associate in science degree programs are offered in 9 fields: biology, chemistry, environmental studies, fashion design, fire and occupational safety, general studies, graphic and advertising design, interior design and journalism.

Bachelor of arts degree programs are offered in 18 fields: art, biology, chemistry, communication, economics, English, fashion design, graphic and advertising design, history, interior design, mathematics, philosophy, physics, political science, psychology, social welfare, sociology and world music.

Bachelor of science degree programs are offered in three fields: biology, chemistry, and environmental studies.

Detailed information on these undergraduate programs is available in the *Undergraduate Bulletin*.

Master of arts degree programs are offered in four fields: community psychology, gerontology, humanities and organizational/industrial psychology.

The master of science degree is offered in environmental sciences.

The senior professional certificate is offered in applications of psychology.

Detailed information on these graduate programs is available in this *Graduate Bulletin*.

## School of Business Administration

The School of Business Administration offers programs leading to the associate in science degree and the bachelor of science degree. Through the Graduate School, the School of Business Administration offers programs leading to the master of science degree, the master of business administration degree, the master of public administration degree, the executive master of business administration degree and the senior professional certificate.

Associate in science degree programs are offered in four fields: business administration; communication; hotel management, tourism and travel; and retailing.

Bachelor of science degree programs are offered in 20 fields: business administration; business data processing; business economics; business science — biology; business science — chemistry; business science — physical science; business science — physics; communication; finance; financial accounting; hotel management, tourism and

travel; institutional food service administration; international business; management science; managerial accounting; marketing; operations management; personnel management; public administration and retailing.

Detailed information on these undergraduate programs is available in the *Undergraduate Bulletin.*

Master of science degree programs are offered in three fields: accounting, industrial relations and taxation.

The master of business administration degree, the executive master of business administration degree and the master of public administration degree are also offered.

The senior professional certificate is offered in accounting and taxation, economic forecasting, finance, general management, international business, marketing, public management and quantitative analysis.

Detailed information on these graduate programs is available in this *Graduate Bulletin.*

### DIVISION OF CRIMINAL JUSTICE

The Division of Criminal Justice within the School of Business Administration offers programs leading to the associate in science degree and the bachelor of science degree. Through the Graduate School, the Division of Criminal Justice offers programs leading to the master of science degree.

Associate in science degree programs are offered in two fields: criminal justice — administration and criminal justice — corrections.

Bachelor of science degree programs are offered in five fields: criminal justice — administration, criminal justice — corrections, criminal justice — forensic science, law enforcement science and security management.

Detailed information on these undergraduate programs is available in the *Undergraduate Bulletin.*

Master of science degree programs are offered in two fields: criminal justice and forensic science.

Detailed information on these graduate programs is available in this *Graduate Bulletin.*

## School of Engineering

The School of Engineering offers programs leading to the master of science degree, the bachelor of science degree, the associate in science degree and the senior professional certificate.

Bachelor of science degree programs are offered in six fields: computer technology, electrical engineering, mechanical engineering, industrial engineering, materials engineering and civil engineering.

The associate in science degree is offered in engineering.

Detailed information on these undergraduate programs is available in the *Undergraduate Bulletin*.

The master of science degree is offered in six fields: computer and information science, electrical engineering, environmental engineering, industrial engineering, operations research, and mechanical engineering.

The dual degree, master of business administration/master of science in industrial engineering, is also offered.

The senior professional certificate is offered in computer and information systems.

Detailed information on these graduate programs is available in this *Graduate Bulletin*.

## School of Professional Studies and Continuing Education

The School of Professional Studies and Continuing Education offers programs leading to the associate in science degree and bachelor of science degree as well as part-time credit and noncredit courses both on and off campus. The school has eight distinct units: the **Division of Evening Studies**, which offers a wide variety of undergraduate credit programs; **professional studies**, which offers full-time degree programs in aeronautical technology, occupational safety and health, fire science and packaging and package handling; the **summer school**, which offers undergraduate courses in two, five-week terms to students wishing to accelerate their academic careers or to make up courses uncompleted during the previous year; the **off-campus program** offered at various locations throughout the state; **intersession**, which offers credit courses during the period between the fall and spring semesters; the **Division of Special Studies**, which offers a variety of noncredit, certificate courses in both specialized and general areas of study; the **Management Center**, which provides specialized training to managers and administrators in business and industry; and the **Division of Continuing Education**, which offers noncredit, intensive seminars, workshops and institutes.

Complete information about the individual units may be found in the *Undergraduate Bulletin*.

# Graduate School

## General information

The Graduate School academic year is conducted on a term system. Most classes meet once each week in the late afternoon and early evening for thirteen consecutive weeks. A small proportion of the classes are scheduled on Saturdays. Other classes meet on a swing shift schedule, where professors meet the same class at both morning and evening hours on the same day to accommodate police officers, fire fighters or other students who work a rotating shift.

The Fall term begins in September and ends in December; the Winter term begins in January and ends the first week of April; the Spring term begins the second week in April and ends in July.

The Graduate School Summer session runs for six and one-half weeks from mid-July to late August. Classes generally meet twice a week. Independent study is possible in some cases, subject to the approval of the program coordinator. Intensive seminars and courses of a shorter duration are occasionally offered during the summer months. Refer to the summer session brochure for details.

## Full-time study

Though most graduate students at the university study on a part-time basis, it is possible to do full-time work in the Graduate School. At the University of New Haven, the following 12 graduate programs permit full-time study; any program not listed here would be difficult or impossible to study as a full-time student: business administration, public administration, accounting, criminal justice, industrial engineering, computer and information science, forensic science, operations research, community psychology, organizational/industrial psychology, the dual degree, master of business administration/master of science in industrial engineering and mechanical engineering.

# Admission

## General requirements

Applicants to the University of New Haven Graduate School are required to have an undergraduate degree from an accredited institu-

tion. Certain programs have additional requirements for admission to specific curricula, details of which are included in the program listings later in the bulletin.

Admission decisions are based primarily on an applicant's undergraduate record. Prospective students who are currently completing their undergraduate study should submit an official transcript complete to the date of application. In most cases, an admission decision will be made on the basis of the partial transcript, contingent upon completion of the baccalaureate degree. Registration will not be permitted until a final, official transcript is submitted to the Graduate School admission office.

In support of an application, students may submit their scores from the Graduate Record Examination, both the Aptitude Test and the Advanced Test, the Graduate Management Admission Test or the Miller Analogies Test. Students may be required to take one or more of these tests.

## Procedure

An applicant for admission to the Graduate School must submit a formal application, two letters of recommendation, complete official transcripts of all previous college work and the nonrefundable application fee.

Students may be admitted for any term. Should a student be unable to enter the Graduate School during the term for which admission is granted, the acceptance will remain open for one calendar year. After one year, a new application for admission will be required.

## Admission categories

Applicants and students in the Graduate School are assigned to one of three categories: fully matriculated, provisional or special.

### FULLY MATRICULATED

Students accepted for entrance into a regular degree program are fully matriculated students.

### PROVISIONAL

Applicants whose undergraduate average falls below the standard set for full matriculation may be accepted provisionally. Students accepted provisionally should seek out the advice of their coordinator or adviser so that their graduate work can be closely supervised.

Students who complete the work stipulated in their provisional acceptance with an average of B or better will automatically become fully matriculated graduate students.

### SPECIAL

Special student status is reserved for students who do not wish to matriculate in a program. Registration is limited to 12 credit hours of graduate work. Should the student desire to continue graduate work, he or she must be accepted into a specific graduate program. Special students are responsible for seeing to it that prerequisite requirements for the courses they wish to take are met.

## In-process registration

Prospective students who complete their applications after the stated deadline may register once as "in-process" students. In-process students may register for no more than six credits' work without the approval of the coordinator of the program for which they are applying.

It is the responsibility of in-process students to see to it that all materials in support of their application are received by the university in time for a matriculation decision before the next term. In-process students will not be permitted to register a second time until a matriculation decision has been made. Acceptance as an in-process student does not guarantee admission to the Graduate School.

## Auditors

An auditor is allowed to attend class and is expected to participate in class discussions and complete the required assignments. An auditor receives no grade or credit toward any degree. Auditor status does not imply admission to any of the graduate degree programs. There is a special *Application for Study as an Auditor* form available in the Graduate Office. Both registered students and nonstudents are eligible to audit University of New Haven Graduate School courses.

## Admission of international students

Qualified international students are welcome as students in the Graduate School of the University of New Haven.

U.S. immigration regulations require that students holding a student visa maintain adequate progress. Adequate progress means full-time study, which is generally interpreted to mean taking at least three

courses each term. Prospective international students should, therefore, note that not all graduate programs are designed to permit full-time study. A complete listing of such programs is provided elsewhere in this bulletin.

The major criterion for the admission of international students is the same as that used for citizens of the United States: Does the undergraduate preparation of the student qualify him or her for graduate study in a degree program at the University of New Haven? Since institutions and systems of higher education vary from country to country, the international applicant may expect that he or she will be asked to provide substantiation, not only of the courses taken and grades received, but also of the academic reputation of the undergraduate school within the educational system of the particular country. All transcripts must be provided in English.

In addition, the Graduate School requires that the applicant submit evidence of English proficiency. The TOEFL examination is recommended, but if undergraduate work has been completed in English or if arrangements for the TOEFL are difficult, the GRE or GMAT examinations may be substituted for the TOEFL. The Graduate School may also require that evidence of English proficiency be ascertained by an overseas interview, any charge for which must be borne by the prospective student.

Every international applicant will be evaluated carefully regarding undergraduate subject matter mastery and English proficiency. A student whose examination score falls below acceptable standards for English proficiency (which in the case of the TOEFL examination is 600) or whose undergraduate work does not provide necessary preparation for the particular program of study chosen in the Graduate School, may be admitted subject to the requirement that the course of study at the University of New Haven include intensive work in English and undergraduate courses, for which no graduate credit will be given.

International students will need to provide a signed financial resource statement prior to the issuance of an I-20, since the university must certify that it has checked the international student's finances. The University of New Haven does not offer financial assistance to international students.

One year's tuition, meaning the tuition for three, three-credit courses for each of three terms, is required in advance before a form I-20 will be issued. This tuition will be refunded according to usual refund policies if the I-20 is returned to the Graduate School Admission Office.

International students are required to have medical insurance, and may elect to purchase the University's student policy if they wish.

Since the review of applications from international students takes much longer than those from citizens of the United States, it is important that applications and all supporting materials be received by the Graduate School well before the stated deadline in the academic calendar.

Upon acceptance students are invited to contact the director of housing for assistance in locating living accommodations.

Graduate students studying under an F-1 visa are allowed 24 months to complete a degree program. All F-1 visa students must register for a minimum of 9 credit hours per term. Once visa students have completed their degree program the International Student Office will not issue an I-538 for extension of temporary stay, except for periods of practical training approved by the Graduate School and the U.S. Office of Immigration.

## Registration

Registration deadlines are listed in the graduate calendar and in the class schedules that are published each term.

Any student who fails to register for two consecutive terms will no longer receive registration materials. It will be the responsibility of the student to notify Graduate Records of the desire to continue graduate study.

No registrations will be accepted after the stated deadlines, and no add slips will be accepted after the first week of class. A student may withdraw from a course any time prior to the last scheduled class meeting. Course additions or withdrawals may be handled in person or by mail.

The university reserves the right to change class schedules or instructors at any time. It further reserves the right to cancel any course, and, in such cases, will refund full tuition to the students.

Students with an outstanding balance will not be permitted to register. Current students who register after the registration deadline will be assessed a late registration fee.

# Academic Policies

## Academic counseling

Students may request academic counseling at any time. Appointments should be scheduled through department chairmen or program coordinators.

It is the student's responsibility to select courses in accordance with prerequisites, the adviser's recommendations, the departmental plan of study (if required) and the requirements for the degree.

A student is not required to file a formal plan of study with the Graduate School. It is the student's responsibility to meet the stated requirements for the degree.

## Awarding of degrees

The University of New Haven awards degrees twice a year, at commencements in January and in June.

Students completing the requirements for a degree at the end of the fall term will receive the degree in January. Students completing the requirements for a degree at the end of the winter term will receive the degree at the June commencement. Students completing the requirements for a degree at the end of the spring term will receive the degree the following January. Students completing the requirements for a degree in July will receive a formal statement that they have completed all requirements for the degree and will formally be awarded their diploma in January.

Candidates for January Commencement must file a petition with Graduate Records no later than October 14, and for June Commencement no later than March 1. Forms for this purpose are available in the Graduate School Office and in the Office of the Registrar. Payment of the graduation fee must accompany the petition.

Should a candidate not fulfill all the requirement for graduation before the deadline after having filed the petition to graduate and paid the fee, the student will have to petition again at a later date. At that time, only the refiling fee will be charged.

All financial obligations to the university must be met prior to graduation.

## Grading system

The Graduate School uses the following grading system:

**A** —Superior performance
**B** —Good performance
**C** —Passing performance
**F** —Failure
**P** —Pass-carries credit hours toward the degree
**S** —Satisfactory performance in a noncredit course
**W** —Withdrawal from a course
**I** —Incomplete-given on rare occasions. A grade of **I** that is not changed within one calendar year automatically reverts to a **W**.
**T** —Used for thesis/seminar project students who have not completed work during the term in which they originally registered for the course. Students must complete their work within the maximum allowable time for graduate work.

## Grade reports

Reports of the final grade in each subject will be mailed to the student soon after the close of each term.

## Academic standards

The academic standing of each student is determined on the basis of the quality point ratio earned each term.

To determine a quality point, each letter grade earned during a term is assigned a quality point value:

A —Four quality points
B —Three quality points
C —Two quality points
F —Zero quality points
P —Zero quality points
S —Zero quality points
U —Zero quality points
W —Zero quality points
I —Zero quality points
T —Zero quality points

The quality point ratio is obtained by multiplying the quality point value of each grade by the number of semester hours assigned to each course in the bulletin, then dividing the total quality points carried by the total semester hours attempted.

A cumulative quality point ratio is obtained by calculating the quality point ratio for all courses attempted at the University of New Haven.

## Repetition of work

A student may repeat a course, with the new grade superseding the old grade in the computation of the quality point ratio. The original grade remains on the transcript.

## Probation and appeals

Any graduate student whose cumulative quality point ratio (QPR) is below 3.0, a B average, will be considered to be on academic probation, and may be required to obtain permission from the program coordinator before registering for additional course work. A student whose cumulative QPR is below 2.7 after completion of 24 credits will be required to withdraw from the Graduate School.

Appeals concerning directed withdrawal from the Graduate School under these circumstances should be directed to the dean of the Graduate School, who will in turn refer the appeal to the department chairman and/or the responsible administrative unit.

## Transfer credit

Transfer credit may be given for graduate courses taken at other accredited institutions subject to the following conditions:

a. the courses were at the graduate level;
b. each grade was B or better; and
c. the courses did not fulfill requirements for any other degree already earned by the student.

## Waiver of courses

Certain required courses in each program may be waived on the basis of undergraduate courses taken at accredited institutions. For a course to be waived, a student must first secure the written approval of the department chairman or a faculty member acting for the department chairman in the department in which the waiver is requested. Only fully matriculated students may seek waivers.

## Thesis

A number of preliminary steps are required before registration for thesis will be accepted by the graduate registrar. The student completes the form, *Proposal for Research Projects, Theses, Seminar Projects, or Independent Studies,* in which the proposed subject, the methodology and the hypothesis are described. The student secures the approval signature of a faculty member who will serve as adviser. The student must also secure the approval of the proposed thesis and the thesis adviser by the program coordinator. Only after the graduate registrar has received the signed proposal form will the student be permitted to register for thesis.

A thesis will carry no fewer than six academic credits taken over no fewer than two academic terms. A preliminary draft must be presented to the adviser at least 45 days prior to commencement. Upon approval by the adviser and program coordinator, two final, unbound copies are presented to the Graduate School at least three weeks before commencement. After the dean of the Graduate School approves the thesis, credit is awarded and the thesis is deposited in the university library for binding and becomes part of the permanent collection. Additional copies may be required by the adviser or the program coordinator.

For guidance in the preparation of theses, graduate students should consult *A Manual for the Preparation of Graduate Thesis and Technical Projects*, copies of which are available in the Graduate School Office. Questions not resolved by the instructions should be settled in consultation with the adviser and by reference to a standard

style manual. The Graduate School participates in the University Microfilm Masters Program, and outstanding theses will be awarded this recognition upon the recommendation of the adviser, the program coordinator, or both.

## Research projects, seminar projects, and independent study

Some departments and academic programs require the completion of research projects, seminar projects, or independent study rather than theses. In these cases, as with a thesis, students must have the written approval of their advisers and department chairmen prior to enrolling. This is accomplished by completing the form, *Proposal for Research Projects, Theses, Seminar Projects, or Independent Studies*, and securing required approvals.

Students preparing a research project, seminar project, or independent study should follow the guidelines presented in the *Manual for the Preparation of Graduate Thesis and Seminar Projects*, copies of which are available in the office of the Graduate School.

## Time limit for completion of degree requirements

Students must complete all the requirements for their degree within five years of the date of their initial matriculation in the program. Any extension of the time limit can be granted only by the dean of the Graduate School after consultation with the appropriate program coordinator.

## Residency requirements

Degree programs have a 30-graduate-credit residency requirement, with the exception of the M.B.A./M.S.I.E. dual degree program which has a 60-graduate-credit residency requirement. Credit toward the residency requirements may be earned at the main campus or at the off-campus centers.

## Graduate school ethics

It is Graduate School policy that all students are expected to complete all course requirements on their own initiative and endeavor, with no collaboration unless specifically authorized by an instructor. In ad-

dition, material used by students but authored by another individual, publisher, company, government or organization shall be identified as such by appropriate footnotes or references. Violations of this policy, either in fact or in spirit, will normally be handled by the faculty member involved though they may be grounds for dismissal from the Graduate School. Students wishing to appeal the decision of a faculty member should contact the Graduate School.

# Tuition and fees

The following are the tuition, fees and charges which were in effect during the 1978-1979 school year. The university reserves the right, at any time, to make whatever changes may be deemed necessary in admission requirements, fees, charges, tuition, regulations and academic programs prior to the start of any class, term semester, term or session.

## TUITION

| | |
|---|---|
| Tuition, per credit hour | $82 |
| Executive MBA program, total cost effective August 1979 | 6,000 |
| Noncredit course fee, per course | 155 |
| Auditor, per course | 155 |

## NONREFUNDABLE FEES

| | |
|---|---|
| Application fee | $15 |
| Auditor application fee | 5 |
| Graduate Student Council fee, per term | 1 |
| Graduation fee | 35 |
| Graduation refiling fee | 15 |
| Laboratory fee | 20 |
| Computer use fee | 20 |
| Late payment fee | 10 |
| Late registration fee, current students | 15 |
| Registration fee, per term | 5 |
| Senior professional certificate fee | 10 |
| Transcript fee, first copy | free |
| Additional copies | 1 |
| Fee for dropping a course | 5 |

## Payment

Tuition for graduate courses is due at registration. However, the university permits graduate students to pay tuition on an installment basis, paying one half with the registration form and the balance before the first day of the term. All students who have not completed tuition payments by the first day of the term will be assessed the late payment fee.

Students are responsible for payment of tuition to the university, even though they may be eligible for their employer's tuition reimbursement plan. Students are responsible for making their own arrangements with their employers for reimbursement.

The university withholds the giving of grades, the award of diplomas, the issuance of transcripts and the granting of honorable dismissal to any student whose account is in arrears.

The university accepts Master Charge and BankAmericard/VISA for payment of tuition.

## Withdrawal

To be eligible for a refund of tuition, students must formally notify the registrar of their intention to withdraw by completing the university withdrawal form and submitting it to the registrar by mail or in person. The date of the postmark on mailed withdrawal form, or the date of submission on those brought in person, determines the amount of the refund, if any, due the student.

## Refunds

The refund policy for graduate students who withdraw from any course or from any program is as follows: 80% refund of tuition upon formal withdrawal prior to the second regularly scheduled class meeting, 60% refund of tuition upon formal withdrawal prior to the third regularly scheduled class meeting, 40% refund of tuition upon formal withdrawal prior to the fourth regularly scheduled class meeting, 20% refund of tuition upon formal withdrawal prior to the fifth regularly scheduled class meeting. No refund will be made after the fifth regularly scheduled class meeting.

## Living costs

Estimated costs for attending the University of New Haven Graduate School for the 1978-79 academic year are as follows.

| SINGLE STUDENT | *6 Credits* | *9 Credits* | *12 Credits* |
|---|---|---|---|
| Tuition and Fees | $ 498. | $ 744. | $ 990. |
| Books and Materials | 54. | 80. | 108. |
| Base Living Costs | 1,560. | 1,560. | 1,560. |
| Cost Per Term | $2,112. | $2,384. | $2,658. |
| Cost Per Year (10 months) | $6,336. | $7,152. | $7,974. |
| **MARRIED—NO CHILDREN** | | | |
| Tuition and Fees | $ 498. | $ 744. | $ 990. |
| Books and Materials | 54. | 80. | 108. |
| Base Living Costs | 2,098. | 2,098. | 2,098. |
| Cost per Term | $2,650. | $2,922. | $3,196. |
| Cost Per Year | $7,950. | $8,766. | $9,588. |

Budgets are adjusted for additional family members.

| Additional living costs for summer: | |
|---|---|
| Single | $ 940. |
| Married | 1,260. |

NOTE: Living costs are based on Estimated BLS Moderate Consumption Budget Standards (20-35 age group) adjusted to Autumn 1978.

Source: GAPSFAS News and Notes, Vol. II, No. 4, January 1979.

# Financial support for graduate study

Financial support is available to graduate students in the form of fellowships, assistantships, grants-in-aid, loans and work-study.

The deadline for application for fellowships and teaching assistantships is April 15 of the preceding academic year. Fellowships offer partial tuition support to full- and part-time students, and are awarded on the basis of outstanding academic achievement.

Teaching assistantships are competitive appointments available in some programs and departments and carry a stipend and partial tuition support. The teaching assistant must work approximately 20 hours a week.

Grant-in-aid awards are based upon financial need, and require

the GAPSFAS application. The deadlines for the receipt of this application are July 1, December 1, and March 1. Applications received after those deadlines can be acted upon only if funds permit.

The state of Connecticut and other states have established loan programs offering long-term loans at low interest rates. In Connecticut, a student may borrow up to a maximum of $5,000 each school year. Repayment starts one year after graduation. Federal interest benefits cover the full interest while in attendance and during the year following graduation.

Part-time employment is also available to graduate students under the college work-study program. The program enables students with financial need to work on- or off-campus for a maximum of 20 hours a week.

## Application and eligibility

A GAPSFAS (Graduate and Professional School Financial Aid Service) application is required for all forms of support based upon need. GAPSFAS applications are available in the financial aid office and the Graduate School office.

GAPSFAS applications are mailed by the student directly to GAPSFAS for processing, after which GAPSFAS will forward the application to the university. Generally, GAPSFAS requires four weeks to process applications before forwarding to the school. Since the university must receive the processed application by the deadline date, approximately four weeks before the start of the term for which the student is seeking aid, students are encouraged to file financial applications early. A list of exact university deadlines is available from the financial aid office.

International students are not eligible for financial assistance based upon need, since they must certify availability of sufficient funds at time of entry. Students on academic probation are not eligible for financial aid.

## Cooperative education

Working with the definition and philosophy of cooperative education developed by the National Commission for Cooperative Education, a planning committee designed the program offered by the Graduate School at the University of New Haven.

A key characteristic of the University of New Haven program, which is limited to graduate students, is a very high level of faculty involvement in the design and monitoring of work experiences to assure quality control. This careful interest develops an intricate relationship between the work functions and the academic disciplines.

Work assignments are scheduled to correspond exactly with the Graduate School calendar. Registration and grading procedures are

identical to those for regular terms.

The graduate cooperative education program is organized around a two-year cycle in which two, six-month work periods alternate with two, six-month periods of full-time graduate study.

During work assignments, students receive the salary of a full-time employee from the cooperative education employer, the amount of which is negotiated between the student and the employer.

### SCHEDULED SEQUENCE

#### First Year

| | |
|---|---|
| 6 months (2 terms) full-time study | 18 credits |
| 3 or 6 months full-time work registered as one independent study | 3 credits |
| Total credits in first year | 21 credits |

#### Second Year

| | |
|---|---|
| 6 months (2 terms) full-time study | 18 credits |
| 3 or 6 months full-time work registered as one independent study | 3 credits |
| Total credits in second year | 21 credits |
| Total credits, first and second years | 42 credits |

The cooperative education program schedule will allow students to complete 42 credits of work during the two-year period. Some programs, however, require more than 42 credits' work. In those programs, additional study may be required.

## The Law Enforcement Assistance Program

The Omnibus Crime Control and Safe Street Act of 1968 established loan and grant programs awarded under the Law Enforcement Education Program (LEEP). These awards are subject to current guidelines of the Department of Justice and the availability of funds.

Full information and applications for financial aid under LEEP can be obtained from the financial aid office.

### LOANS

The Law Enforcement Student Loan Program makes available ten-year, interest-bearing (7%) notes of up to $2,200 per academic year to full-time students enrolled in undergraduate and graduate programs leading to degrees in areas directly related to law enforcement.

These loans can be cancelled at the rate of 25% for each year of employment in a public, state, local or federal law enforcement agency.

### GRANTS

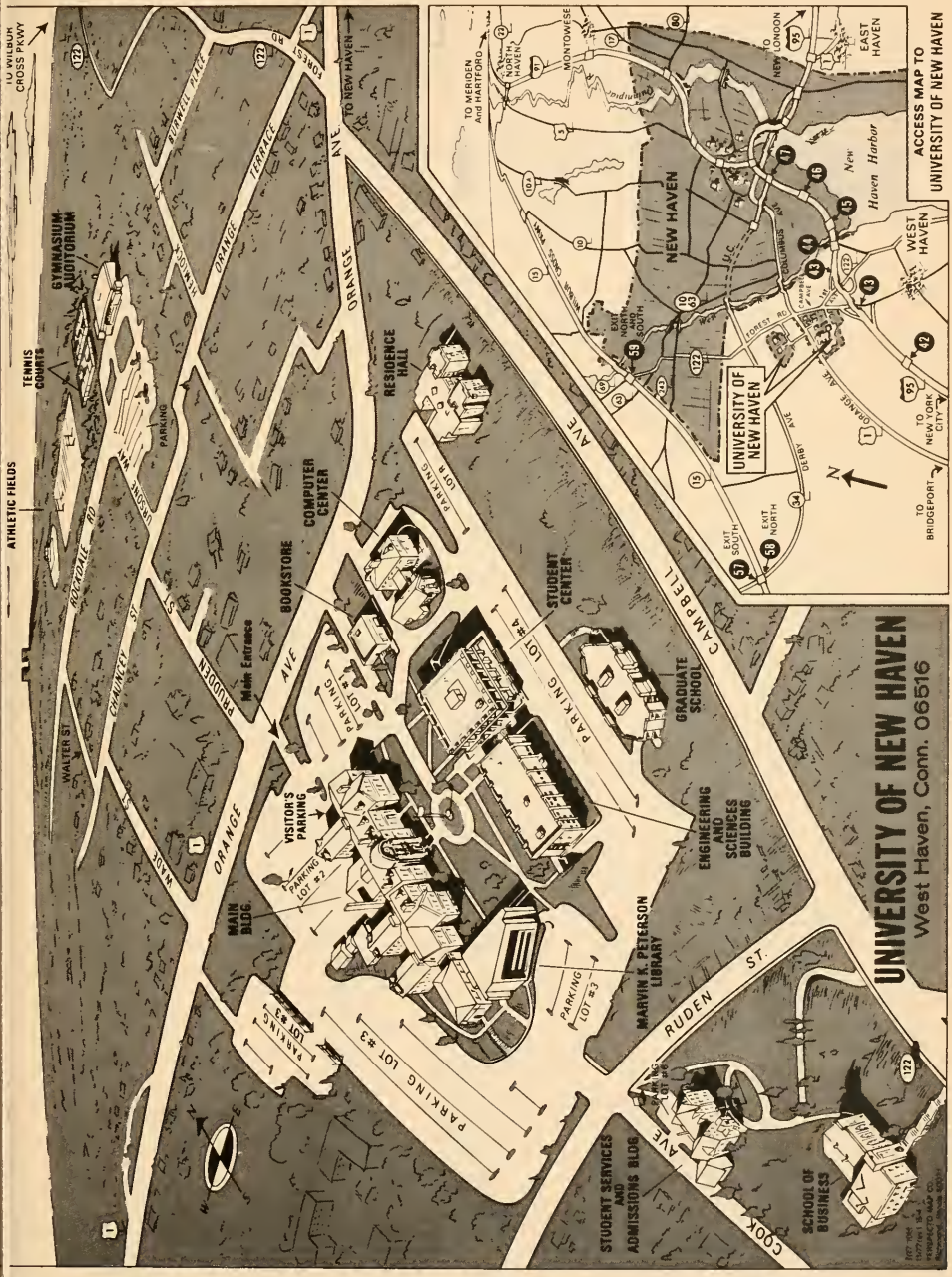
Grants are available to full-time employees of a publicly funded law enforcement agency under the Law Enforcement Student Grant Program. Payments of up to $250 per term are provided to full- or part-time graduate students working toward a degree in this field. A recipient must agree to remain with a law enforcement agency for two years after completion of studies funded by this grant.

## Title XX funds

All graduate students should be aware that they may be able to receive a waiver of tuition through Title XX. To receive this waiver, students must be full- or part-time paid employees of agencies receiving Title XX funding. At least 20% of students' professional responsibilities must involve face-to-face contact with clients of their agencies. In addition to completing all forms normally required for admission, students must complete Title XX forms.

Students who believe they qualify should contact the Title XX Office.

Map


UNIVERSITY OF NEW HAVEN
West Haven, Conn. 06516
ACCESS MAP TO UNIVERSITY OF NEW HAVEN
TO WILBUR CROSS PKWY
ATHLETIC FIELDS
TENNIS COURTS
GYMNASIUM AUDITORIUM
PARKING
ROCKDALE RD
CHAUNCEY ST
WALTER ST
WADE
PRUDDEN ST
ORANGE AVE
Main Entrance
BOOKSTORE
COMPUTER CENTER
RESIDENCE HALL
ORANGE AVE
FOREST RD
TO NEW HAVEN
STUDENT CENTER
CAMPBELL AVE
GRADUATE SCHOOL
ENGINEERING AND SCIENCES BUILDING
MARVIN K. PETERSON LIBRARY
RUDEN ST.
COOK AVE
STUDENT SERVICES AND ADMISSIONS BLDG
SCHOOL OF BUSINESS
MAIN BLDG.
VISITOR'S PARKING
PARKING LOT #1
PARKING LOT #2
PARKING LOT #3
PARKING LOT #4
PARKING LOT #6
PARKING LOT #8
TO MERIDEN And HARTFORD
NORTH HAVEN
MONTOWESE
TO NEW LONDON
EAST HAVEN
NEW HAVEN
New Haven Harbor
WEST HAVEN
UNIVERSITY OF NEW HAVEN
EXIT NORTH AND SOUTH
EXIT SOUTH
EXIT NORTH
DERBY AVE
TO NEW YORK CITY
TO BRIDGEPORT
N

# STUDENT ACTIVITIES AND OTHER SERVICES

## About New Haven

Since 1638 when English Puritans first settled in the fledgling colony which indians had called Quinnipiack, New Haven has played host to the tastes and talents of succeeding waves of immigrants from all parts of the world. And today, looking ahead to its 350th birthday, New Haven stands as the gateway to New England.

In population, New Haven ranks third in the state and 51st in the country, with 763,000 persons. More than 1,000 firms in the immediate area produce products including guns, hardware, rubber goods, paper products, machinery and tools. The city is served by three television stations, six radio stations and has both a morning and afternoon newspaper.

### History

With roots in the early 1600's, New Haven is rich with material for the historian, whether serious scholar or weekend explorer. A cassette-guided tour of the area surrounding the New Haven Green, available from the New Haven Information Center, traces events from the Puritans to the present. Yale's public campus tour points out other

famous spots – some historical, some hysterical – on the 280-year-old campus of the nation's fourth-oldest university.

A century ago, on January 28, 1878, New Haven District Telephone Company opened the world's first telephone switching office for its 21 subscribers in New Haven. Grandchildren of some of those first 21 telephone owners are still doing business in New Haven today.

## Transportation

New Haven sits on a natural, deep water port – the third busiest port in New England – located on the northern shore of Long Island Sound. By automobile on major state and interstate highways, New Haven is 75 miles east of New York, 45 miles south of Hartford, 104 miles west of Providence and 135 miles southwest of Boston.

New Haven's Union Station is a major rail stop on Amtrak's popular Boston-Washington corridor. Frequent Conrail and Amtrak trains reach Boston or Philadelphia in three hours and Washington in six.

Tweed-New Haven Airport offers direct flights to many northeastern cities. Hourly limousine service from downtown New Haven shuttles passengers directly to Hartford's International Airport, New York's LaGuardia or Kennedy International Airports, or Newark Airport.

New Haven is served by major bus lines, with express service to major cities throughout the northeast. Connecticut Transit buses provide local service; several suburban bus lines run to and from many major Connecticut towns.

## Art

The oldest university art gallery in the western hemisphere, the Yale University Art Gallery represents virtually all national schools and important periods in art history. The Mellon Gallery of British Art, also in New Haven, holds the most comprehensive collection of British art found anywhere under one roof.

Numerous smaller galleries throughout the region display smaller, more specialized collections of interest to a wide range of artistic tastes. The extensive museum collections in New York City are just a short distance away.

## Concerts

Musical offerings available in the New Haven area appeal to a full range of tastes. The 85-year-old New Haven Symphony, the fourth oldest continuously performing orchestra in the country, performs regularly. The Woolsey Hall Concert Series brings visiting orchestras and well-known instrumentalists to the city. Several groups present chamber music and string quartet concerts. The Connecticut Ballet performs in New Haven. Many performances, including Yale Symphony, Yale Philharmonia and other Yale concerts, are free and open to the public.

There is much to attract more contemporary tastes as well. Concerts at the Coliseum bring top entertainers to New Haven, including Yes, The Grateful Dead, Billy Joel, Bruce Springsteen, John Denver and Frank Sinatra.

A typical Friday night may see disco at the Erica Cafe, the Galvanized Jazz Band or the Ten Years Late Jug Band at Millpond Tavern, quiet piano and vocals at Sherman's Taverne on the Green, local bands at the Arcadia Ballroom or Toad's Place, or a lot of quiet talk at FitzWilly's. Fridays on campus are jumping, too.

## Skiing

Connecticut has six ski areas of its own, most with excellent snowmaking and night-skiing capabilities. For beginners, the university's physical education department runs a ski class one night a week each winter at a nearby ski area.

Great skiing in the Berkshires is two or three hours away in western Massachusetts. You'll find international class skiing in the Green Mountains of Vermont, three to six hours away depending upon how tall you like your mountains.

## Sports

The University of New Haven fields teams in 14 varsity sports; all games are open to spectators. The Triple-A league West Haven Yankees, farm club team for the New York Yankees, play professional baseball at Quigley Stadium in West Haven, walking distance from campus. The North American Soccer League Connecticut Bicentennials and the American Hockey League New Haven Nighthawks are both based in the city.

Bridgeport, Hartford and Milford Jai Alai frontons are nearby, as is the Plainfield Greyhound Park.

"Doers" can visit one of seven golf courses, 30 tennis courts, six skating rinks, 50 playgrounds, 15 parks, or simply walk on the shore. The university's extensive intramural program, described elsewhere in this bulletin, is open to all students.

## Theatre

New Haven, long famous as a Broadway tryout town, today offers a rich range of theatrical styles. The reknowned Long Wharf Theatre offers top, professional theatre with stars such as Eli Wallach, Ann Jackson and Frank Converse. Yale Repertory Theatre presents less well known plays in a range of styles – from Renaissance to Avant Garde. The American Shakespeare Theatre in Stratford is a must-see, too, with open-air performances of the Bard's great works and other classical presentations.

A number of dinner theatres regularly present popular plays and musicals. Local professional and advanced amateur repertory companies give those with an interest in drama their chance to be on stage as well as in front of it.

# Activities

## Clubs and organizations

There are almost 40 university student clubs and societies open to interested students. Included are student chapters of professional societies, religious organizations, social groups and special interest clubs.

## Councils

Separate day, evening and graduate student councils have the responsibility for initiating, organizing and carrying through extracurricular activities and for liaison between students and the university staff.

The Graduate Student Council is a forum where graduate students can provide input to the administration in order to improve all aspects of graduate education at the university. The council schedules a number of extracurricular activities, and all graduate students are encouraged to attend.

## Cultural activities

There are student organizations formed around interests in literature, art, film and drama. These groups sponsor visiting artists and

lecturers, publish materials and generally provide a well-rounded cultural program for University of New Haven students.

## Publications

Student publications include *The News,* the university student newspaper; *The Chariot,* the annual yearbook; *The Noiseless Spider,* a literary publication; and the *Student Handbook.* Students may volunteer their services on any of the student publications.

## WNHU radio

WNHU, the university's student-operated FM stereo broadcast facility, operates throughout the year on a frequency of 88.7 MHz at a power of 1,700 watts. This extracurricular activity, open to all university students, whether undergraduate or graduate, serves southern Connecticut with the best in music, news and community affairs programming. Its sportscasters are the voice of University of New Haven Charger sports teams. The WNHU broadcast day consists of locally produced shows. However, selected Intercollegiate Broadcasting System and National Public Radio features are also presented.

In its first year, WNHU gained national attention when announcer Tony Salzo set a 270-hour world record for longest continuous broadcast. In 1974, WNHU again achieved national prominence by winning *Broadcast Management/Engineering* magazine's "Best Station Award."

All WNHU activities in programming, business and engineering operations are performed by students in the university's day, evening and graduate divisions. The station will train all qualified students in their respective areas of interest.

## Social activities

The social calendar is filled with varied events to appeal to all students: mixers, concerts, films, free parties to climax each semester, cabarets and Homecoming.

## Student center

The Student Center provides a focal point for all student activities. Offering lounges, student offices, a game room, a large cafeteria and a snack bar, the facility has been designed to serve as a center for the student's nonacademic college interests.

The Rathskeller, also located in the Student Center, opens daily at 4 p.m. serving draft beer and snacks. Live entertainment is often presented in the Rathskeller on the weekends.

# Services

## Alumni

Membership in the Alumni Association is acquired immediately upon graduation. All degree graduates become members automatically. Including the class of 1978, there are almost 11,000 members of the Alumni Association. The alumni director, with the assistance of the Alumni Association president, conducts the affairs of the association during the period between meetings which occur four times per year.

As a member of the Alumni Association, graduates receive an alumni card which enables them to use the university library, gymnasium facilities and the services of the Career Development Office. *Insight*, an all-college publication, is mailed to all alumni nine times per year. Homecoming, an annual event in October, and other educational and social events are open to all alumni. Alumni volunteers play an important role in the Annual Giving Campaign.

The Alumni Association is represented on the Board of Governors by a member who is elected to a term of two years. The president of the association serves on the Board of Governors as an ex-officio member.

Members of the Alumni Advisory Council are elected to a two-year term, and number approximately 30 people. The council is an advisory board to the university on alumni relations, and its primary objectives are to strengthen alumni relations and to promote communication between the alumni and the university as a whole.

## Athletics

Graduate students are encouraged to make use of the North Campus athletic complex. Facilities include three basketball courts, handball-paddleball court, weight room with universal gym, a multipurpose exercise room, steam room, fully equipped training room, six tennis courts, two softball fields, baseball diamond and combination football-soccer-lacrosse field.

While graduate students are not eligible to participate in the undergraduate intercollegiate athletic program, they are eligible to take an active part in the intramural sports program administered by

Physical Education Department Chairman Don Wynschenk. Intramural competition in touch football, badminton, bowling, three- and five-player basketball, paddleball, softball, tennis, floor hockey and volleyball are also sponsored.

A valid UNH ID card is required for entrance to the North Campus gym or tennis courts, during nonclass or free-time hours. In general, the gymnasium is open for graduate student use at times when regularly scheduled games and classes are not in progress. Students should take care to secure their locker or leave properly identified valuables with the equipment manager while using any facility.

Students who participate in intramurals or use any UNH athletic complex facility are not covered by the university athletic insurance policy and participate at their own risk. The university recommends that an appropriate insurance policy be carried by each student to cover medical costs in case of injury.

During the school year, the gymnasium is open from 9 a.m. to 9:30 p.m. Monday through Friday with the hours 5 p.m. through 9:30 p.m. generally reserved for undergraduate and graduate student use. The gym is available from 1 p.m. to 5 p.m. on Saturday. The building is closed on Sundays.

The tennis courts are open dawn to dusk during clement weather and are supervised during peak hours, limiting use to UNH students and personnel on a one-hour-time-limit basis.

The paddleball court must be reserved a day in advance by calling 934-6320 prior to 8:30 a.m. and 934-6321, Ext. 255, between 8:30 a.m. and 5 p.m.

It is hoped that graduate students will avail themselves of a full range of activities and that they will seek out athletic department and physical education department staff members to express interests in areas where further graduate student participation can be encouraged.

## Bookstore

The university's bookstore provides all necessary texts, new and used, that are required for courses at the university. It also carries related supplies, greeting cards, imprinted clothing, gifts, candy and a selection of paperbacks, newspapers and periodicals. The bookstore buys back used texts on a daily basis throughout the year. It also orders class rings and handles film processing for the campus community.

Special arrangements are made for students taking courses at off-campus locations to purchase required books at or near off-campus centers.

# Career Development and Off-Campus Employment Office

This office has two primary functions within the university: career advising and providing information about off-campus employment. It is located at the ground level below the bookstore on the main campus.

## CAREER DEVELOPMENT

To assist students in making career choices, individual counseling is available and is supplemented by other resources. Special workshops on resume preparation, interviewing skills and job research techniques are scheduled in both the fall and spring semesters. For those students with questions as to what career direction is most reasonable to pursue, a monthly professional career testing service is available.

In addition, the office maintains an extensive library of career information, vocational resources, brochures and annual reports on specific employers.

## OFF-CAMPUS EMPLOYMENT

While the office is not an employment service, listings of both full- and part-time positions are maintained to provide a common meeting ground for employers and prospective employees. Undergraduate and graduate students will find this useful both in locating part-time and full-time employment while in school, as well as employment following graduation. Alumni seeking positions are encouraged to use the services of the office.

Employers wishing to list positions with the Off-Campus Employment Office need only call or write, giving a description of the position available and other details. There is never any fee charged for this service.

## ON-CAMPUS RECRUITMENT

During each academic year, employer representatives visit the campus to interview graduating University of New Haven students, both graduate and undergraduate. In addition, representatives of a number of graduate schools visit to interview seniors interested in pursuing graduate education.

Students at all stages of their education and alumni are urged to make use of the office's resources in formulating career plans.

## PUBLICATIONS

The Career Development and Off-Campus Employment office regularly publishes the career development section of the university

newspaper, *Insight*, and circulates the monthly campus recruiting letter. These publications appear during the first week of every month during the academic year and are also included with the alumni news. Information such as career development events, workshops, seminars, recruitment visits, employment outlook for graduates, job listings, job search hints, etc., are included.

The *Recruitment Schedule* will be mailed to any member of the university community who wishes it and provides the office with a supply of stamped, self-addressed envelopes for the number of months desired.

## Chaplains

Chaplains of the major faiths represented in our student body are available for religious counseling and for presiding at special occasions.

## Computer facilities

The university Computer Center provides time-sharing and batch processing of jobs for both academic and administrative functions at the university.

The center maintains two independent yet totally compatible processing units each with 64K of core memory. One system is dedicated solely to academic usage with single batch capability and a capacity for 16 remote terminals for interactive use, where users can type in information and receive immediate response. There is also the capacity for Remote Job Entry (RJE) stations on or off campus. The peripherals attached to the central processing unit are two 20-megabyte on-line disk drives, one magnetic tape drive, one 1000-card-per-minute reader, one 600-line-per-minute printer, one 100-card-per-minute punch unit, one graph plotter and one graphics display unit, a stand-alone minicomputer which is switchable to a terminal port on the main computer.

The system dedicated to administrative functions has dual batch capabilities and allows an additional 16 terminal port accesses as well as the capacity for RJE stations on or off campus. The peripherals attached to the central processing unit are seven disk drives, each with 20 megabytes of on-line storage, two magnetic tape drives, two 1000-card-per-minute readers, two 600-line-per-minute printers, one 400-card-per-minute punch unit and one paper tape reader.

A major portion of data entry is made via remote terminal entry from various campus centers including admission, the registrar's office, the scheduling office and others. Terminal access is divided into stationary hard-wired and portable dial-up types. Terminals are both hard-copy and cathode-ray tube.

Both systems are under control of the operating system, DNA's TSO with spooling. Because of the hardware and software redundancy between the administrative and academic systems, users are assured of almost perfect back-up under most circumstances. Although batch processing is available to the academic community during all class hours from morning to evening, the system is up and running at all times for portable terminal usage. Typically, 12 terminal ports are available to each segment during the day and 24 during the evening to morning hours.

Students have the opportunity to learn such languages as FORTRAN IV, COBOL, PL/1, RPG-II, APL, BASIC, IBM-1130 Assembler, IBM-360/370 BAL and others. The Computer Center offers a variety of engineering packages including stress analysis, electrical engineering circuitry analysis, mechanical engineering design programs and others. Statistical programs, plotter and graphics design programs and simulation programs are a part of many course offerings. Training in the usage, programming and debugging of programs on interactive terminals is stressed.

More than 85 percent of the center's computer time available is given to academic service, which provides active training to more than 700 students each semester.

The Computer Center is staffed by degree-holding computer professionals, with student assistants as operators for the academic system. These student operators have demonstrated an ability and interest in the computer field, and their service at the center qualifies as on-the-job experience when applying for jobs upon graduation.

The electrical engineering laboratory facilities include a Digital Corporation PDP-11/10D Minicomputer system. This system incorporates both disk and cassette drives and has teletype input-output as well as a graphics display terminal. Although primarily intended for use in electrical engineering courses, arrangements may be made for other students to work with this system.

## Counseling

Individual counseling is offered to students for personal problems, for marital and domestic problems and for study and career choice problems. Students can obtain assistance for educational, vocational and general life problems.

A student who does not know where to go for help should contact the Counseling Center for information and direction.

### TESTING

The Counseling Center of the University of New Haven offers psychological testing including vocational interest, personality assessment and academic placement. Students who are unsure of their

academic skills, eventual career choices or life goals may request help in these areas.

## Housing

The Housing office, located in the Student Center, will assist graduate students in finding off-campus housing accommodations. At the present time, college-owned housing for graduate students is not available. The office is open from 9:00-5:00, Monday through Friday, for any student wishing to find housing accommodations. The office has listings for apartments, houses and private rooms.

## International students

The university is fortunate in having many countries represented in its student body. The International Student Office provides special guidance when needed. The International Center of New Haven, located near the Yale campus, welcomes all international students to the many programs they sponsor and to full use of their facilities.

## Library

The Marvin K. Peterson Library, named in honor of the former president of the university, was opened in 1974. It has a capacity of 300,000 bound volumes. Adjoining the Main Building, it includes special collection rooms, a music room, archives and spacious reading and reference areas. Study is made convenient by modern research facilities and equipment including microreading stations and microform reader-printers.

The library contains more than 200,000 volumes, 70,000 U.S. government documents, 8,000 record albums, numerous corporate annual reports, pamphlet files and microfilm. The library subscribes to 11,000 periodicals and extensive back issue files are maintained.

The resources of both the New Haven and West Haven public libraries are available to students (nonresidents must pay a fee). Under a reciprocal arrangement, University of New Haven students may borrow materials from the libraries of Albertus Magnus College or Quinnipiac College by presenting a valid identity card.

## Minority student affairs

The director of Minority Affairs represents the needs and interests of minority students at the University of New Haven. The director works closely with minority students to ease the transition into the academic environment while enabling the student to maintain cultural pride and heritage. The director also promotes social and cultural activities which are of special interest to minority students.

The director of Minority Affairs works closely with the dean of students and the president in making decisions which affect minority students on campus.

## Services for the handicapped

The Office of Handicapped Services provides guidance and assistance to students with physical handicaps. The office also coordinates the university's compliance with section 504 of the H.E.W. Rehabilitation Act of 1973. All inquiries and problems concerning barrier-free access to university facilities should be addressed to this office.

## Veterans Affairs

Since the university has one of the largest veteran enrollments in Connecticut, an Office of Veterans Affairs with a full-time staff is maintained. The Veterans Administration has assigned to the university a V.A. representative who maintains liaison directly with state and national V.A. offices. In addition to processing applications for various V.A. benefits, the campus Veterans Office provides a wide range of supportive services for veterans attending the university. Assistance is available in academic areas, and special help such as funding for tutorial assistance, readers for the blind and aid for the disabled is also available.

# Cancellation of Classes

In the event it becomes necessary to cancel graduate classes for inclement weather or other reason, radio announcements will be broadcast beginning at approximately 1 p.m. on the following stations:

| | | |
|---|---|---|
| **WADS** | 690 AM | Ansonia |
| **WATR** | 1320 AM | Waterbury |
| **WAVZ** | 1300 AM | New Haven |
| **WDJF** | 107.9 FM | Westport |
| **WELI** | 960 AM | New Haven |
| **WERI** | 1230 AM, 103.7 FM | Westerly, R.I. |
| **WFIF** | 1500 AM | Milford |
| **WGCH** | 1490 AM | Greenwich |
| **WHCN** | 105.9 FM | Hartford |
| **WICC** | 600 AM | Bridgeport |
| **WINE** | 940 AM | Brookfield |
| **WKCI** | 101.3 FM | Hamden |
| **WLAD** | 800 AM, 98.3 FM | Danbury |
| **WLIS** | 1420 AM | Old Saybrook |
| **WMMM** | 1260 AM | Westport |
| **WNAB** | 1450 AM | Bridgeport |
| **WNHC** | 1340 AM | New Haven |
| **WNHU** | 88.7 FM | West Haven |
| **WNLC** | 1510 AM | New London |
| **WOMN** | 1220 AM | Hamden |
| **WPLR** | 99.1 FM | New Haven |
| **WPOP** | 1410 AM | Hartford |
| **WQQW** | 1590 AM | Waterbury |
| **WRKI** | 95.1 FM | Brookfield |
| **WSTC** | 1400 AM | Stamford |
| **WSUB** | 980 AM | Groton |
| **WTIC** | 1080 AM | Hartford |
| **WTYD** | 100.9 FM | New London |
| **WWCO** | 1240 AM | Waterbury |
| **WWYZ** | 92.5 FM | Waterbury |

An announcement of the cancellation of undergraduate day classes does not apply to graduate classes unless the announcement states the university has been closed. The cancellation of graduate classes will be announced independently.

# ACADEMIC PROGRAMS

Accounting
Business Administration
  Hotel Management option
Business Administration/Industrial Engineering dual degree
Community Psychology
Computer and Information Science
Criminal Justice
Electrical Engineering
Environmental Engineering
Environmental Sciences
Executive M.B.A.
Forensic Science
Gerontology
Humanities
Industrial Engineering
Industrial Relations
Mechanical Engineering
Operations Research
Organizational/Industrial Psychology
Public Administration
Senior Professional Certificates
Taxation

# Accounting

**Coordinator:** Jeffrey L. Williams, C.P.A., C.M.A.; M.B.A., University of Bridgeport

The overall objective of the Master of Science in accounting program is to provide a framework for accounting inquiry, devised in structure and content from the entire scope and process of accounting-information-based economic decision making. The existence of such a framework is intended to provide for graduate accountants and professional practitioners an opportunity to share in the development and assessment of issues of accounting interest within a decision-making context. Accordingly, the M.S. program is structured to receive its objective and direction from the overall objective of accounting– providing information useful to the process of economic decision making.

To accomplish this objective, the M.S. program offers a structure of studies designed to provide:

1. an examination of the foundations of economic decision making (foundation courses, 18 credits);
2. an analysis of the role and usefulness of accounting information for economic decision making (core courses, 15 credits); and
3. an opportunity for further selected specialization from the generally recognized branches or divisions of accounting inquiry (electives, 9 credits).

Each student, upon entering the program, will be assigned a faculty adviser who will assist the student throughout the program of study, particularly with the selection of suitable electives. The assigned faculty adviser will also act as, or assist in the selection of, the student's thesis adviser.

## ADMISSION POLICY

Admission to the program is open to persons holding an undergraduate degree from an accredited institution, preferably, but not exclusively, in accounting or in business administration with a major in accounting. Persons holding other than the above degrees will be required to take a number of selected undergraduate courses. Admission is based primarily on an applicant's undergraduate record; however, the promise of academic success is the essential factor for admission. In support of their applications, persons may submit their scores from the Admission Test for Graduate Study in Business. An applicant may be required to take this test.

## Requirements for the degree Master of Science in accounting

A minimum total of 42 credits will be required to earn the Master of Science in accounting. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

### THESIS

All students are required to write a thesis. The thesis must show ability to organize material in a clear and original manner and present well-reasoned conclusions.

The complete and final manuscript must be submitted to the thesis adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree. Thesis preparation and submission must comply with the Graduate School policy on Thesis detailed elsewhere in this bulletin.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| **Foundation courses** | | | |
| EC | 604 | Macroeconomic Analysis | 3 |
| EC | 603 | Microeconomic Analysis | 3 |
| FI | 651 | Portfolio Management and Capital Market Analysis | 3 |
| FI | 615 | Finance | 3 |
| MG | 637 | Management | 3 |
| QA | 604 | Probability and Statistics | 3 |
| | | | 18 |
| **Core courses** | | | |
| A | 650 | Advanced Accounting Theory | 3 |
| A | 621 | Managerial Accounting | 3 |
| A | 654 | Financial Statements: Reporting and Analysis | 3 |
| A | 698 | Thesis | 6 |
| | | | 15 |
| | | Electives | 9 |
| | | Total | 42 |

ELECTIVE COURSES

**Financial accounting specialization**

| | | |
|---|---|---|
| A | 651 | Financial Accounting Seminar |
| A | 652 | Advanced Auditing |
| A | 653 | Accounting for the Not-for-Profit Organizations |
| A | 656 | International Accounting |
| FI | 649 | Security Analysis |

**Managerial accounting specialization**

| | | |
|---|---|---|
| A | 661 | Managerial Accounting Seminar |
| A | 641 | Accounting Information Systems |
| A | 642 | Operational Auditing |
| FI | 645 | Corporate Financial Theory |

**Taxation specialization**

| | | |
|---|---|---|
| A | 604 | Corporate Income Taxation I |
| A | 605 | Corporate Income Taxation II |
| One | | Taxation Elective |

# Business Administration

**Coordinator:** William S. Y. Pan, Ph.D.
Columbia University

The general purpose of the M.B.A. program at the University of New Haven is the education of men and women at the graduate level for careers in business administration as well as other job areas requiring a sound grasp of business principles. The overall objective of the program is to enhance the student's perspective of managerial skills.

The program has been designed to develop a professional point of view in managing an organization. It further develops the student's ability to utilize the newest analytical and quantitative techniques used in corporate decision making. The student is also exposed to an in-depth analysis of various theories of business and managerial behavior, emphasizing the business organization in relation to its internal and external environment.

Another important objective of the program is to afford the student an opportunity to develop special skills by concentrating in a given study area.

# Requirements for the degree Master of Business Administration

A total of 48 credits, with or without a thesis, is required of candidates for the M.B.A. degree.

If maximum waiver credit is granted, a student must complete a minimum of 30 credit hours for the M.B.A. degree. The residence requirement is also 30 graduate credit hours. Undergraduate courses may not be counted in meeting the minimum 30 credits required for the M.B.A. degree.

Candidates for the M.B.A. degree are urged to write a thesis as part of the requirement for the degree. A thesis student has the opportunity to work with a faculty member on a mutually determined research project. Candidates who elect not to write a thesis must take two additional courses in place of a thesis.

Students in the M.B.A. program are expected to be familiar with the use of computers in solving problems. The use of a computer is required in a number of courses in the M.B.A. program. Students deficient in this area should register for IE 603C, Introduction to Digital Computers: COBOL. Students wishing to learn FORTRAN should register for IE 603F. However, a student will only be granted graduate credit for either IE 603C or IE 603F, not both.

A student must complete the basic core before taking advanced courses in the M.B.A. program. The basic core consists of QA 604, QA 605 and two from among P 619, MG 637, EC 603, EC 604 and EC 625. A student whose undergraduate degree is in a nonbusiness area may also be required, unless a waiver is granted, to take A 600, EC 600 and QA 600, which are noncredit graduate-level courses.

## WAIVER POLICY

Required courses in the M.B.A. program may be waived on the basis of undergraduate courses taken at accredited institutions. For a course to be waived, a student must first secure the written approval of the department chairman or a faculty member acting for the chairman of the department in which the course is offered.

A course that has been waived cannot be taken for elective credit.

## THESIS

Students electing to write a thesis must register for thesis in the appropriate business department. The thesis must show ability to organize material in a clear and original manner and present well-reasoned conclusions.

The thesis is written under the direction of the faculty member in charge of the departmental thesis program or a faculty member with special competence in the subject matter covered by the thesis. The complete and final manuscript must be submitted to the thesis adviser

prior to the end of the tenth week of the term in which the student expects to complete the requirements for the degree. Thesis preparation and submission must comply with the Graduate School policy on Thesis/Seminar Project Requirements detailed elsewhere in this bulletin.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| EC 603 | Microeconomic Analysis | 3 |
| EC 604 | Macroeconomic Analysis | 3 |
| QA 604 | Probability and Statistics | 3 |
| QA 605 | Advanced Statistics | 3 |
| MK 609 | Marketing | 3 |
| FI 615 | Finance | 3 |
| MG 637 | Management* | 3 |
| P 619 | Organizational Behavior | 3 |
| A 621 | Managerial Accounting | 3 |
| EC 625 | Industrial Relations | 3 |
| | Thesis** | 6 |
| | Electives | 12 |
| | | 48 |

* Students in the Health Care Management Concentration take MG 640 in place of MG 637.

** Candidates who elect not to write a thesis must take two additional business courses in place of thesis.

### CONCENTRATIONS

Within the Master of Business Administration program, students are allowed to concentrate their studies in a specific area. There are several structured concentrations offered by various departments.

A concentration consists of four courses taken in one area. With the permission of the adviser, students may substitute other appropriate courses for those listed as part of a concentration.

#### Accounting

Adviser: Jeffrey L. Williams, Associate Professor of Accounting, C.P.A., C.M.A., M.B.A., University of Bridgeport

| | | |
|---|---|---|
| A 650 | Advanced Accounting Theory |
| A 661 | Managerial Accounting Seminar |
| | *plus any two accounting or taxation electives* |

### Computer and information science

Adviser: William S. Gere Jr., Associate Professor of Industrial Engineering, Ph.D., Carnegie-Mellon University

*four courses from the following:*

| | | |
|---|---|---|
| IE | 603 | Introduction to Digital Computers |
| IE | 604 | Management Systems |
| IE | 605 | Advanced Business Programming |
| IE | 606 | Advanced Technical Programming |
| IE | 610 | Computer Systems Design |
| IE | 614 | Data Information Systems |

### Economic forecasting

Adviser: John J. Teluk, Associate Professor of Economics, M.A., Free University of Munich

| | | |
|---|---|---|
| QA | 607 | Forecasting |
| EC | 653 | Econometrics |
| IE | 603 F | Introduction to Digital Computers: FORTRAN |

*and one of the following:*

| | | |
|---|---|---|
| MG | 633 | Managerial Economics |
| IE | 606 | Advanced Technical Programming |
| EC | 665 | Urban and Regional Economic Development |
| EC | 690 | Research Project |
| MK | 639 | Marketing Research and Information Systems |

### Finance

Adviser: Jeffrey L. Williams

| | | |
|---|---|---|
| FI | 651 | Portfolio Management and Capital Market Analysis |
| FI | 645 | Corporate Financial Theory |
| FI | 617 | Financial Institutions and Capital Markets |

*and one of the following:*

| | | |
|---|---|---|
| FI | 649 | Security Analysis |
| FI | 655 | Commodity Market Analysis |
| FI | 661 | Real Estate: Principles and Practices |
| FI | 619 | Monetary and Central Banking Policy |

### Health care management

Adviser: John R. Coleman, Associate Professor of Public Administration; Ph.D., University of Massachusetts

| | | |
|---|---|---|
| MG | 640 | Management of Health Care Organizations (this course to be taken in place of MG 637 in the core of the M.B.A. program) |

*and four courses from the following;*

| | |
|---|---|
| PA 642 | Health Care Delivery Systems |
| PA 645 | Health Care Economics and Finance |
| PA 643 | Health and Institutional Planning |
| PS 635 | Law and the Public Health |
| PA 644 | Administration of Programs and Services for the Aged |
| PA 641 | Institutional Budgeting |

### Hotel management, tourism and travel

Adviser: Robert A. Elting, Associate Professor of Hotel Management, Ph.D., New York University

Admission to the concentration in hotel management, tourism and travel requires permission of the concentration adviser; certain undergraduate courses may be required.

*four courses from the following:*

| | |
|---|---|
| HM 610 | Content Seminar in Hospitality/Institutional/ Tourism Administration |
| HM 625 | Supervisory and Leadership Analysis in Tourism, Hospitality and Institutional Operations |
| HM 630 | Personnel and Labor Relations in the Tourism/ Hospitality/Institutional Fields |
| HM 640 | Haute Cuisine for Hospitality Executives |
| HM 655 | Development of Hotel/Restaurant/Institutional Food Services |

### International business

Adviser: Kevin McCrohan, Associate Professor of Marketing; Ph.D., City University of New York

*four courses from the following:*

| | |
|---|---|
| IB 643 | International Business Operations |
| MG 660 | Comparative Management |
| IB 651 | Comparative Marketing |
| IB 652 | Multinational Business Operations |
| IB 644 | Import and Export Business |
| EC 641 | International Economics |

### Management and organization

Adviser: William S. Y. Pan, Assistant Professor of Management Science, Ph.D., Columbia University

*four courses from the following:*

| | |
|---|---|
| MG 660 | Comparative Management |
| MG 661 | Development of Management Thought |
| MG 662 | Organization Theory |
| MG 663 | Leadership in Organizations |
| MG 664 | Organizational Effectiveness |
| MG 669 | Business Policy and Strategy |
| MG 680 | Current Topics in Business Administration |
| MG 692 | Readings in Management |

### Management science

Adviser: William S. Y. Pan

| | |
|---|---|
| IE 601 | Introduction to Operations Research/Management Science |
| IE 604 | Management Systems |
| QA 606 | Advanced Management Science |
| QA 607 | Forecasting |

### Marketing

Adviser: Kevin McCrohan

| | |
|---|---|
| MK 639 | Marketing Research and Information Systems |
| MK 641 | Marketing Management |
| MK 643 | Product Management |
| | One other course in marketing |

### Media in business

Adviser: Marilou McLaughlin, Associate Professor of Communication, Ph.D., University of Wisconsin

| | |
|---|---|
| CO 601 | is a prerequisite to all of the subsequent courses. |
| CO 601 | Basics of Business Media Production Techniques |
| CO 605 | Planning Audio Visual Systems for Business |
| CO 609 | Scripting the Media Presentation |
| CO 613 | Media Presentations for Business |

### Operations research

Adviser: William S. Gere Jr.

| | |
|---|---|
| IE 607 | Probability Theory |
| IE 621 | Linear Programming |
| IE 622 | Queuing Theory |
| IE 686 | Inventory Analysis |

## Hotel management option

Coordinator: Robert A. Elting, Associate Professor of Hotel Management, Tourism and Travel, Ph.D., New York University

This program, leading to the Master of Business Administration degree with the hotel management option, is designed for those who have completed an undergraduate degree program in hospitality administration or a related major. The student who is not an undergraduate hospitality graduate will be permitted to complete the required undergraduate course work while satisfying the requirements for the M.B.A.

### THESIS

Students electing to write a thesis must obtain the approval of the coordinator for a proposal prior to registration. The thesis must demonstrate ability to organize material in a clear and original manner and present well-reasoned conclusions.

The thesis is written under the direction of the faculty member in charge of the departmental thesis program or a faculty member with special competence in the subject matter covered by the thesis. The complete and final manuscript must be submitted to the thesis adviser prior to the end of the tenth week of the term in which the student expects to complete the requirements for the degree.

Thesis preparation and submission must comply with the Graduate School policy on Thesis/Seminar Project Requirements detailed elsewhere in this bulletin.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| EC 603 | Microeconomic Analysis | 3 |
| EC 604 | Macroeconomic Analysis | 3 |
| QA 604 | Probability and Statistics | 3 |
| MK 609 | Marketing | 3 |
| FI 615 | Finance | 3 |
| MG 637 | Management | 3 |
| P 619 | Organizational Behavior | 3 |
| A 621 | Managerial Accounting | 3 |
| EC 625 | Industrial Relations | 3 |
| HM 698 | Thesis* | 6 |
| | Electives** | 3 |
| | | 36 |

Core Courses

| | | |
|---|---|---|
| HM 610 | Content Seminar in Hospitality/ Institutional/Tourism Administration | 3 |
| HM 640 | Haute Cuisine for Hospitality Executives | 3 |
| HM 655 | Development of Hotel/Restaurant/ Institutional Food Services | 3 |
| HM 690 | Research in Tourism/Hospitality/ Institutional Administration | 3 |
| | | 12 |

ELECTIVE COURSES* *

| | |
|---|---|
| HM 625 | Supervisory and Leadership Analysis in Tourism/Hospitality/Institutional Field |
| HM 630 | Personnel and Labor Relations in the Tourism/Hospitality/Institutional Fields |

*Candidates who elect not to write a thesis may substitute two approved courses in the areas of hospitality, institutional food service, tourism administration or business.

**Elective courses are to be chosen in consultation with an adviser.

## POSSIBLE ADDITIONAL UNDERGRADUATE COURSE REQUIREMENTS

Those candidates who have not completed undergraduate hospitality degree programs will be required to complete 24 to 36 credits of undergraduate hospitality administration courses. These courses will depend upon background in the field, work experience and related course work completed.

The Undergraduate Bulletin of the university lists descriptions of these courses.

# Business Administration/ Industrial Engineering Dual degree program

**Coordinator:** William S. Gere Jr., Associate Professor of Industrial Engineering, Ph.D., Carnegie-Mellon University.

The Graduate School has always encouraged interdisciplinary studies. To foster a broader expertise in the areas of business administration and industrial engineering, a student can now earn both the Master of Business Administration and the Master of Science in Industrial Engineering by successfully completing the Dual Degree Program. The program is intended for students with undergraduate engineering or technical degrees from ECPD accredited schools.

## Requirements for the dual degree Master of Business Administration/ Master of Science in Industrial Engineering

The basic M.B.A./M.S.I.E. program consists of 72 credit hours. Up to 12 of these credit hours may be waived on the basis of undergraduate course work, leaving a minimum requirement of 60 credit hours. All waivers must be approved in writing by the appropriate department and are conditional upon subsequent academic performance.

Graduate credit may be transferred from other accredited institutions subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin. In all cases, the residence requirement for the two degrees shall be 60 credit hours completed at the University of New Haven. In addition, a minimum of 21 credit hours must be earned in business courses and a minimum of 21 credit hours must be earned in engineering courses.

### THESIS

All students must write either a thesis or a seminar project. The thesis or project must show ability to organize material in a clear and original manner and present well-reasoned conclusions.

The thesis/project is written under the direction of the faculty member in charge of the departmental program or a faculty member with special competence in the subject matter covered by the thesis/project. The complete and final manuscript must be submitted to the thesis/project adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree.

Thesis preparation and submission must comply with Graduate School policy on Thesis detailed elsewhere in this bulletin.

## Program of study

REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| A | 621 | Managerial Accounting | 3 |
| FI | 615 | Finance | 3 |
| MK | 609 | Marketing | 3 |
| QA | 605 | Advanced Statistics | 3 |
| MG | 637 | Management | 3 |
| EC | 625 | Industrial Relations | 3 |
| EC | 603 | Microeconomic Analysis | 3 |
| EC | 604 | Macroeconomic Analysis | 3 |
| P | 619 | Organizational Behavior, *or* | |
| P | 620 | Industrial Psychology | 3 |
| IE | 601 | Introduction to Operations Research/ Management Science | 3 |
| IE | 602 | Quality Analysis | 3 |
| IE | 603 F | Introduction to Digital Computers (FORTRAN) | 3 |
| IE | 604 | Management Systems | 3 |
| IE | 607 | Probability Theory | 3 |
| IE | 621 | Linear Programming | 3 |
| IE | 651 | Human Engineering I | 3 |
| IE | 686 | Inventory Analysis | 3 |
| | | Electives (Business) | 6 |
| | | Electives (IE or Math) | 6 |
| | | | 63 |

*plus either:*

| | |
|---|---|
| Project (Business or IE) | 3 |
| Electives (Unrestricted) | 6 |

*or:*

| | |
|---|---|
| Thesis | 6 |
| Electives (Unrestricted) | 3 |
| | 9 |
| | 72 |

# Community Psychology

**Coordinator:** Robert J. Hoffnung, Associate Professor of Psychology, Ph.D., University of Cincinnati

The general purpose of the Master of Arts program in community psychology is to provide training at the graduate level for careers in human services delivery systems utilized in community mental health centers and community action programs. Specifically, the program strives to:

1. develop and enlarge the student's appreciation of the complexities, interrelationships and problems that characterize the community;
2. prepare students to utilize psychological backgrounds to solve contemporary community problems;
3. foster development of problem-solving strategies which enhance mental health, educational and personality development; and
4. train students in performance characteristics as members of research teams, therapeutic teams, and public information teams working under professional guidance.

A collateral objective is to provide graduate training in the late afternoon and early evening for the convenience of men and women who are employed on a full-time basis.

## ADMISSION POLICY

Applicants are expected to possess social and interpersonal characteristics which will support success in human service occupations.

Students who give evidence of sustained interest in community and human service and who hold an undergraduate degree from an accredited college or university are eligible for admission.

Applicants are required to complete a questionnaire to be submitted directly to the Graduate School and may be required to submit scores from either the Miller Analogies Test or the Graduate Record Examination Aptitude Test. An undergraduate major in psychology is not specifically required as a basis for consideration. However, all students are expected to have at least an introductory level understanding of psychological concepts, principles, and methods before taking courses in the Master of Arts in community psychology program.

## Requirements for the degree Master of Arts in community psychology

A total of 39 credit hours is required for the Master of Arts in community psychology degree. Candidates for this degree will be required to complete 21 credit hours of core curriculum courses, including three terms of field experience and practicum.

Eighteen of the 39 credit hours are electives chosen after consulta-

tion with a departmental adviser to help pursue individual academic and professional goals. The organization of the Master of Arts in community psychology program is such that elective courses constitute a very small part of the first year's work but become the major constituents of the second year.

### TRANSFER CREDIT

Transfer credit may be given for graduate course work completed at other accredited institutions, subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

### THESIS

Students electing to write a thesis must register for P 698 Thesis I and P 699 Thesis II. The thesis must show ability to organize materials in a clear and original manner and present well-reasoned conclusions.

The thesis is written under the direction of the faculty member in charge of the thesis seminar or a faculty member with special competence in the subject matter of the thesis. The complete and final manuscript must be submitted to the thesis adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree.

Thesis preparation and submission must comply with the Graduate School policy on Thesis detailed elsewhere in this bulletin.

### FIELD EXPERIENCE AND PRACTICUM SEMINAR

The field-study courses will be integrated with the instructional courses of the program. While the field-study courses are shaped by the agency program in which they occur, the students simultaneously carry on a rich program of reading. For each field-study term, the students will be required to prepare a plan of experience under the guidance of their advisers. At the end of each term the students will submit reports on their experience, skill development and insights.

A salient characteristic of the field experience and practicum seminar sequence involves the role of the field experience coordinator who works with the students both at the site of the field experience and in the practicum seminar.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| P | 605 | Survey of Community Psychology | 3 |
| P | 607 | Special Problems in Community Psychology | 3 |

| | | | |
|---|---|---|---|
| P | 609 | Research Methods | 3 |
| P | 610 | Program Evaluation in Community Psychology | 3 |
| P | 611 | Field Experience and Practicum Seminar I: The Dyadic Relationship | 3 |
| P | 612 | Field Experience and Practicum Seminar II: Models of Consultation | 3 |
| P | 613 | Field Experience and Practicum Seminar III; Systems Intervention | 3 |
| | | Electives* | 18 |
| | | | 39 |

*To be selected after consultation with a departmental adviser.

# Computer and Information Science

**Coordinator:** William S. Gere Jr., Associate Professor of Industrial Engineering, Ph.D., Carnegie-Mellon University

The Master of Science in computer and information science curriculum is an interdisciplinary program with a software orientation. It is designed to provide a high-level academic background for CIS managers and systems analysts in all career areas. A wide selection of electives allows students to concentrate in either technical or business applications.

## Requirements for the degree Master of Science in computer and information science

The basic program consists of 48 credit hours. Required courses may be waived on the basis of undergraduate courses taken at accredited institutions.

All waivers must be approved in writing by the industrial engineering department, and are conditional upon subsequent academic performance. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

## SEMINAR PROJECT

The program requires all students to complete IE 690 Seminar Project. This requirement is met by the preparation of a relevant seminar project report, prepared under the direction of a faculty adviser. The complete and final manuscript must be submitted to the project adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree. For further specifications, see *Research Projects, Seminar Projects and Independent Study Requirements* detailed elsewhere in this bulletin. It is suggested that a student begin work on the seminar project after having completed at least 15 credit hours.

In certain cases, students who routinely complete projects similar to the required Seminar Project as a part of their professional duties may petition to satisfy the Seminar Project requirement by taking two advanced industrial engineering electives in place of the project. Such a substitution must have the prior written approval of the program coordinator.

# Program of study

### Required courses

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| IE | 603 C | Introduction to Digital Computers (COBOL), *or* | |
| IE | 603 F | Introduction to Digital Computers (FORTRAN) | 3 |
| M | 610 | Fundamentals of Calculus and Linear Algebra | 3 |
| IE | 604 | Management Systems | 3 |
| IE | 614 | Data Information Systems | 3 |
| EE | 615 | Computer Logic and Intelligence | 3 |
| IE | 601 | Introduction to Operations Research/ Management Science | 3 |
| IE | 605 | Advanced Business Programming, *or* | |
| IE | 606 | Advanced Technical Programming | 3 |
| IE | 610 | Computer Systems Selection | 3 |
| IE | 690 | Seminar Project | 3 |
| | | Electives (I.E., Math, or E.E.) | 9 |
| | | Electives | 12 |
| | | | 48 |

# Criminal Justice

**Director:** Richard E. Farmer, Assistant Professor of Criminal Justice, Ed. D., Boston University

The President's Commission on Law Enforcement and Administration of Justice assigned a high priority to the task of improving the education and training of personnel entrusted with the administration of criminal justice in the United States.

A key objective of the Master of Science in criminal justice program is the training and education of men and women planning careers in the field of criminal justice as well as the advanced training and education of the men and women who staff the agencies and institutions of the criminal justice system.

The university views the criminal justice system as one continuous integrated process from a study of the nature of deviant behavior to the role of rehabilitation and parole.

The program stresses a broad understanding of the social and behavioral sciences, the institutions of the criminal justice system, and the development of methodological tools and skills. This is done somewhat at the expense of courses that are narrowly professional in the belief that the field of criminal justice is dynamic and that a broad understanding of the social and behavioral sciences and the methodological skills and tools will prove more valuable to a student's career in the long run than narrow professional training.

The broad fields of the criminal justice program at the university are social and behavioral science, the institutions of the criminal justice system and methodological tools and skills.

The courses in the area of social and behavioral science stress the theories of the behavior of man in a social order and the sanctions imposed by different societies to control the social behavior of their members.

Courses in the area of criminal justice institutions stress the study of the existing system from the police, through the courts, the penitentiaries, and the system of probation and parole.

The methodological courses expose students to the tools of research and analysis and the contribution of systems analysis to the efficient administration of the criminal justice system.

## ADMISSION POLICY

In addition to the general Graduate School admission requirements, all criminal justice applicants must take the Aptitude Test of the Graduate Record Examination or the Miller Analogies Test as part of the admission procedure. GRE applications are available in the Graduate Office or by writing directly to the Educational Testing Service, Princeton, N.J. Miller Analogies Test may be taken at the UNH

Counseling Center. Applicants are also required to complete a questionnaire to be submitted directly to the Graduate School.

## Requirements for the degree Master of Science in criminal justice

A total of 45 credit hours is required of candidates for the degree of Master of Science of criminal justice.

Candidates must complete 21 credit hours of required courses in the core curriculum. After consultation with their adviser, students select 24 credit hours of electives from approved courses in the departments of criminal justice, economics, psychology, political science, sociology, industrial engineering and management science.

The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

### THESIS

Students electing to write a thesis must register for thesis with the department. The thesis must show ability to organize material in a clear and original manner and present well-reasoned conclusions.

The thesis is written under the direction of the faculty member in charge of the departmental thesis program or a faculty member with special competence in the subject matter covered by the thesis. The complete and final manuscript must be submitted to the thesis adviser prior to the end of the tenth week of the term in which the student expects to complete the requirements for the degree.

Thesis preparation and submission must comply with the Graduate School policy on Thesis Requirements detailed elsewhere in this bulletin.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| CJ 601 | Seminar in Interpersonal Relations | 3 |
| CJ 605 | Social Deviance | 3 |
| CJ 610 | Administration of Justice | 3 |
| CJ 628 | Introduction to Systems Theory | 3 |
| CJ 635 | Statistics in the Public Sector | 3 |
| CJ 637 | Contemporary Issues in Criminal Justice | 3 |
| CJ 642 | Research Techniques in the Social Sciences | 3 |
| | Electives (Approved) | 24 |
| | | 45 |

# Electrical Engineering

**Coordinator:** Gerald J. Kirwin, Professor of Electrical Engineering, Ph.D., Syracuse University

This program is intended to meet the needs of professionally employed engineers and scientists for academic work beyond the baccalaureate level. It has been designed to deepen the understanding of modern analysis and synthesis techniques as they apply to engineering design. A major goal of this program is to provide a thorough discussion of the characteristics of the latest devices and systems and of their applications in current engineering design. Both analytical and numerical procedures are developed with particular emphasis on the use of computers for problem solving and as elements in larger systems.

The program centers on a core sequence which all students are expected to take. The core courses contain advanced methods of analysis and design which are of common interest to electrical engineers. Each student completes a program by electing courses that are particularly suited to current personal professional interests. In general the elective courses must be chosen from those listed below. Early in the program the student, with the help and approval of an adviser, prepares a detailed plan insuring an overall educational experience that is integrated and logical. All decisions regarding both core and elective courses are subject to the final approval of the student's adviser.

### ADMISSION POLICY

Admission to the program is open to persons holding an undergraduate engineering degree from an institution accredited by the Engineers Council for Professional Development (ECPD). Though admission decisions are based primarily on an applicant's undergraduate record, the promise of academic success is the essential factor for admission.

## Requirements for the degree Master of Science in electrical engineering

A minimum total of 39 credit hours must be completed to earn the Master of Science in electrical engineering degree. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

### THESIS

There is no specific thesis requirement for the Master of Science in electrical engineering. However, students are encouraged to submit a thesis proposal covering applied research in an area of mutual interest to the student and a supervising member of the faculty. If a proposal shows promise of yielding a worthwhile contribution to the professional objectives of the student, and a faculty member accepts the role of supervisor, the student may embark upon the research and earn 6 elective credits. Students electing to do a thesis project will be expected to make an oral presentation of the results of the project.

The complete and final manuscript must be submitted to the thesis adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree. Thesis preparation and submission must comply with the Graduate School policy on Thesis/Seminar Project Requirements detailed elsewhere in this bulletin.

The thesis is deposited permanently in the library. Students are required to submit two copies of the thesis for the library. Additional copies of the thesis are usually required. For this requirement and other regulations regarding the preparation of a thesis, students should consult the "Manual for the Preparation of Graduate Theses and Seminar Projects." Copies of the manual are available in the Graduate School Office.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| EE | 601 | Engineering Analysis I | 3 |
| EE | 602 | Engineering Analysis II | 3 |
| M | 620 | Numerical Analysis | 3 |
| IE | 685 | Theory of Optimization | 3 |
| EE | 603 | Discrete and Continuous Systems I | 3 |
| EE | 604 | Discrete and Continuous Systems II | 3 |
| EE | 630 | Electronic Instrumentation I | 3 |
| EE | 640 | Computer Engineering I | 3 |
| EE | 650 | Random Signal Analysis | 3 |
| | | Electives (Approved) | 12 |
| | | | 39 |

### ELECTIVE COURSES

| | | |
|---|---|---|
| EE | 605 | Modern Control Systems |
| EE | 608 | Computer Aided Design |
| EE | 631 | Electronic Instrumentation II |

EE 634 Digital Signal Processing I
EE 635 Digital Signal Processing II
EE 641 Computer Engineering II
EE 645 Power Systems Engineering I
EE 646 Power Systems Engineering II
EE 658 Microprocessors–Theory and Applications
EE 670 Special Topics–Electrical Engineering
EE 695 Independent Study I
EE 696 Independent Study II
EE 698 Thesis I
EE 699 Thesis II

# Environmental Engineering

**Coordinator:** George R. Carson, Associate Professor of Civil Engineering, M.S.C.E., Columbia University; Professional Engineer (New York, New Jersey, Connecticut, Massachusetts); Land Surveyor (Connecticut, Massachusetts)

The environmental engineering program is intended to meet the needs of engineers for academic work beyond the baccalaureate level. The program is interdisciplinary in nature and incorporates both engineering and science courses.

There exists today a need for a substantial number of engineers knowledgeable in environmental areas. Industries which are required to control the pollution of air and water need environmental engineers. Federal, state and local governments must hire employees and consultants to assist them in environmental matters. Other new vistas will undoubtedly open to the environmental engineers in the future. Environmental engineers will be in increasingly greater demand with the continually increasing problems of pollution.

The recognition and solution of environmental problems are largely the responsibility of engineers and scientists. To perform effectively in this massive effort, they must be technically competent as well as knowledgeable in social and economic matters.

This program provides the advanced educational skills necessary to meet the ever increasing need for engineers with an environmental background. It is designed to offer vigorous, professionally oriented, engineering and science courses in the areas of solid waste, water and air pollution.

Approximately two-thirds of the program consists of a required sequence of courses which each student must complete. The balance of the program consists of courses selected from the list of electives. Selection will be based on the student's principal field of interest. Each

student, upon entering this program, will be assigned a faculty adviser who will consult with the student during the program of study and will assist the student in selection of suitable electives. The faculty adviser will also act as the student's research project adviser.

### ADMISSION POLICY

Candidates for admission in the environmental engineering program are expected to have an engineering degree from an institution accredited by the Engineers Council for Professional Development.

## Requirements for the degree Master of Science in environmental engineering

A total of 39 credit hours must be completed to earn the Master of Science in environmental engineering degree. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| CE 601 | Water Treatment | 3 |
| CE 602 | Wastewater Treatment | 3 |
| CE 605 | Solid Waste Management | 3 |
| CE 606 | Environmental Law and Legislation, *or* | |
| EC 608 | Economics for Public Administrators | 3 |
| CH 601 | Environmental Chemistry | 3 |
| SC 601 | Ecology for Environmental Engineers | 3 |
| SC 602 | Pollutants and the Aquatic Environment, *or* | |
| SC 603 | Air Pollution | 3 |
| CE 612 | Advanced Wastewater Treatment | 3 |
| CE 613 | Industrial Wastewater Control | 3 |
| CE 690 | Research Project | 3 |
| | Electives (CE) | 3 |
| | Electives (Approved) | 6 |
| | | 39 |

# Environmental Sciences

**Coordinator:** Dennis L. Kalma, Associate Professor of Science and Biology, Ph.D., Yale University

The environmental sciences program is intended to meet the needs of scientists for academic work in environmental studies beyond the baccalaureate level. The program is interdisciplinary in nature and incorporates science and engineering courses. This program is designed to accommodate the student with a degree in one of the natural sciences.
knowledgeable in environmental areas. Industries which are required to control the pollution of air and water need environmental scientists. Federal, state and local governments must hire employees and consultants to assist them in environmental matters. Other new vistas will undoubtedly open to the environmental scientists of the future. Environmental scientists will be in increasingly greater demand with the continually increasing problems of pollution.

The recognition and solution of environmental problems are largely the responsibility of scientists and engineers. To perform effectively in this massive effort, they must be technically competent as well as knowledgeable in social and economic matters.

This program provides the advanced educational skills necessary to meet the ever increasing need for scientists with an environmental background. It is designed to offer vigorous, professionally oriented, science and engineering courses in the areas of solid waste, water and air pollution.

Approximately two-thirds of the program consists of a required sequence of courses which each student must complete. The balance of the program consists of courses selected from a list of electives. Selection will be based on the student's principal field of interest. Each student, upon entering this program, will be assigned a faculty adviser who will consult with the student during the program of study and will assist in selection of suitable electives.

## ADMISSION POLICY

Candidates for admission to the environmental sciences program would be expected to have a degree in one of the natural sciences in which certain prerequisite courses have been completed. Students without these courses would be admitted to the program after completing these prerequisites.

## Requirements for the degree Master of Science in environmental sciences

A total of 42 credit hours must be completed to earn the Master of Science in environmental sciences degree. The transfer of credit earned at other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

## Program of study

REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| CE 601 | Water Treatment, *or* | |
| CE 602 | Wastewater Treatment | 3 |
| CE 605 | Solid Waste Management | 3 |
| CE 606 | Environmental Law and Legislation, *or* | |
| EC 608 | Economics for Public Administrators | 3 |
| CH 601 | Environmental Chemistry | 3 |
| SC 601 | Ecology for Environmental Engineers | 3 |
| SC 602 | Pollutants and the Aquatic Environment | 3 |
| SC 603 | Air Pollution | 3 |
| SC 608 | Water Quality | 3 |
| SC 612 | Freshwater and Marine Biology | 3 |
| SC 698-9 | Thesis I & II | 6 |
| | Electives (Approved) | 9 |
| | | 42 |

# Executive Master of Business Administration

**Director:** Gilbert L. Whiteman, Associate Dean of the Graduate School, Associate Professor of Communication, Ph.D., Michigan State University

The Graduate School and the School of Business Administration offer an Executive Master of Business Administration (Executive M.B.A.) degree for high-level executives with extensive managerial experience. The program is designed specifically in consideration of managerial responsibilities and existing time constraints.

The Executive M.B.A. degree program is a two-year, part-time degree program organized to meet the educational needs and executive responsibilities of corporate and institutional leaders. Individual participation is emphasized through class discussions and cooperation with others in the class. Each class is generally limited to between 15 and 20 students. Class members commence and conclude the program as a group.

No graduate transfer credit is accepted into the Executive M.B.A. program. Admission to the Executive M.B.A. degree program is by special application, the form for which may be obtained from the EMBA Program Director. Classes commence in September and January, providing a sufficient number of qualified applicants have applied from which proper selection may be made. An admission committee screens the applications to insure proper selection. Although students are required to complete the Graduate Management Admission Test (GMAT), other important factors such as current position, length of top management experience and prior formal education are important factors in the selection process. The selection committee attempts to provide from among the applicants those individuals who will bring a diverse grouping of managerial skills and experiences, thereby allowing the students to learn from each other as well as from the faculty.

The program consists of twenty courses scheduled into two, ten-month academic calendar years. Each course is four-sessions in length. All classes meet one afternoon/early evening per week in designated off-campus conference facilities for participant convenience. Participants must agree in advance to attend all classes except for emergencies. They must be prepared to devote additional time for class preparation and reading assignments.

Upon completion of the program, participants will be awarded the degree of Master of Business Administration (The Executive Program).

Information concerning admission procedures and the academic calendar may be obtained by writing to the EMBA Program Director.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| EXID 903 | The Communication Process | 1½ |
| EXID 906 | The Management Process | 1½ |
| EXID 909 | Business and Government Relations | 1½ |
| EXID 912 | Financial Accounting | 1½ |
| EXID 915 | Quantitative Decision Making | 1½ |
| EXID 918 | Managerial Economics | 1½ |
| EXID 921 | Executive Development Seminar | 1½ |

| | | |
|---|---|---|
| EXID 924 | Financial Management I | 1½ |
| EXID 927 | Financial Management II | 1½ |
| EXID 930 | Marketing Management | 1½ |
| EXID 933 | International Business Seminar | 1½ |
| EXID 936 | Logistics and Distribution | 1½ |
| EXID 939 | Operations Research and Management | 1½ |
| EXID 942 | Managerial Accounting | 1½ |
| EXID 945 | Human Resource Management | 1½ |
| EXID 948 | Labor-Management Relations | 1½ |
| EXID 951 | Marketing Management Seminar | 1½ |
| EXID 954 | Organizational Development | 1½ |
| EXID 957 | Corporate Policy and Strategy | 1½ |
| EXID 960 | The Executive Seminar | 1½ |
| | | 30 |

# Forensic Science

**Director:** Henry C. Lee, Associate Professor of Criminal Justice, Ph.D., New York University

Forensic Science is a broad interdisciplinary field in which the natural sciences are employed to analyze and evaluate physical evidence related to matters of law. The interdisciplinary forensic science program will provide the advanced technical background for professionals in the forensic science field as well as for those in allied fields, such as pathology, law, criminal justice administration, security, investigation in various areas (crime, fire, insurance), environmental studies and chemistry, for whom knowledge of forensic science concepts and methods is vital for the advancement of professional performance.

The Master of Science in forensic science program stresses not only the up-dated analytical scientific methods, but also the broad understanding of forensic science concepts. The program centers on a core sequence of courses which all students are expected to complete. Advanced concentration can then be either in criminalistics or administration.

## ADMISSION POLICY

For admission to the Master of Science in forensic science program, a student must have an undergraduate degree in a natural or related science. Applicants with deficiencies in one or more areas may be provisionally accepted and will be required to complete the ap-

propriate courses during the early stage of the program before being fully matriculated. Applicants must take the aptitude test of the Graduate Record Examination or the Miller Analogies Test, and complete a questionnaire to be submitted directly to the Graduate School.

## Requirements for the degree Master of Science in forensic science

Candidates are required to complete 40 credit hours of graduate work, including an internship in a forensic science laboratory or equal work with other related agencies. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

### THESIS

Students electing to write a thesis must register for thesis credit with the department. The thesis must show an ability to organize material in a clear and original manner, and present well-reasoned conclusions. Thesis preparation and submission must comply with graduate school regulations detailed elsewhere in this bulletin.

The forensic science laboratory of the university is available for research, and the laboratory maintains close contact with various laboratories in the area to afford students the opportunity to observe, study and learn from many outstanding forensic scientists.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| CJ 647 | Advanced Criminalistics I | 4 |
| CJ 648 | Advanced Criminalistics II | 4 |
| CJ 657 | Physical Analysis in Forensic Science | 4 |
| CJ 659 | Biomedical Methods in Forensic Science | 4 |

### ADDITIONAL COURSES MAY BE TAKEN FROM THE FOLLOWING AREAS:

Basic science electives

| | | |
|---|---|---|
| CH 611 | Special Topics in Advanced Organic Chemistry | 3 |
| CH 621 | Chemical Forensic Analysis with Laboratory | 4 |
| CH 631 | Advanced Instrumentation with Laboratory | 4 |

Other courses will be developed during the 1979-1980 school year. Study will include courses in pathology, immunology and serology, scientific photographic documentation, biochemistry, forensic medicine, advanced forensic serology and forensic toxicology.

### Criminal justice electives

| | | |
|---|---|---|
| CJ | 608 | Law and Evidence |
| CJ | 610 | Administration of Justice |
| CJ | 615 | Forensic Science in the Administration of Justice |
| CJ | 628 | Introduction to Systems Theory |
| CJ | 637 | Contemporary Issues in Criminal Justice |
| CJ | 690 | Research Project I |
| CJ | 691 | Research Project II |
| CJ | 693 | Criminal Justice Internship I |
| CJ | 694 | Criminal Justice Internship II |
| CJ | 695 | Independent Study |

### Other electives

Up to nine credits of electives may be chosen from related areas within the graduate curriculum.

# Gerontology

**Coordinator:** Judith B. Gordon, Associate Professor of Sociology, Ph.D., University of Michigan

The gerontology program is designed for both the practicing professional and those interested in the field of gerontology.

Gerontology is an interdisciplinary field. The core curriculum exposes students to the fundamental insights and perspectives of sociology, social welfare, political science, psychology and administration, and aids students to compare and contrast these disciplines. The program is designed to expose students to crucial skills necessary to function effectively as gerontological professionals and to prepare them to pursue leadership roles in the field.

The gerontology program is suitable for government employees, health care professionals and program administrators working in the field of aging, and for those considering such careers now or in the future.

### ADMISSION REQUIREMENTS

Prospective students must fulfill the admission requirements of the Graduate School. In addition, they may be required to fulfill additional requirements set by the Committee on Studies in Gerontology.

## Requirements for the degree Master of Arts in gerontology

Each degree candidate will complete an 18-hour core curriculum, and either the 21-hour concentration in psycho-social studies or the 21-hour concentration in administrative studies. A total of 39 credit hours is required for the degree. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin. All waivers must be approved in writing by the program coordinator.

## Program of study

### REQUIRED CORE COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| SO 651 | Social Gerontology | 3 |
| P 672 | Psychology of the Middle and Later Years | 3 |
| PA 644 | Administration of Programs and Services for the Aged | 3 |
| PS 633 | The Political Process and the Aged | 3 |
| SC 642 | Physical Aging | 3 |
| SO 652 | Seminar in Gerontology | 3 |
| | | 18 |

Students are expected to take SO 651, Social Gerontology, early in their studies, and SO 652 toward the end of the program.

#### Concentration in psycho-social relations

| | | |
|---|---|---|
| SO 641 | Death and Suicide | 3 |
| SW 651 | Social Work with the Elderly I: Individuals, Families and Groups | 3 |
| SW 652 | Human Services with the Elderly II: Programs, Planning, Policies | 3 |
| | | 9 |

*Three courses such as:*

| | | | |
|---|---|---|---|
| P | 623 | Psychology of the Group | 3 |
| P | 625 | Advanced Psychology of Human Development | 3 |
| P | 630 | Psychology of Personality | 3 |
| P | 632 | Group Dynamics and Group Treatment | 3 |
| P | 636 | Abnormal Psychology | 3 |
| | | | 9 |
| | | Electives | 3 |
| | | | 21 |

Students with no prior working experience in gerontology are strongly advised to undertake a field work practicum.

**Concentration in administrative studies**

| | | | |
|---|---|---|---|
| P | 619 | Organizational Behavior | 3 |
| PA | 604 | Seminar in Communities and Social Change | 3 |
| PA | 641 | Institutional Budgeting | 3 |
| PA | 643 | Health and Institutional Planning | 3 |
| | | A Management Science elective, by advisement | 3 |
| | | Electives, by advisement | 6 |
| | | | 21 |
| | | Total | 39 |

Students with no prior supervised working experience in gerontology are strongly advised to undertake a field work practicum.

# Humanities

**Director:** Ralf E. Carriuolo, Professor of Music, Chairman, Department of Humanities, Ph.D., Wesleyan University

**Coordinator:** John Collinson, Professor of Philosophy, Ph.D., The Johns Hopkins University

The program leading to a Master of Arts degree in humanities will assist the student to develop an understanding of the range and capacity of social, practical, and artistic creativity; an appreciation of the cultural achievements of our past; and an increased sensitivity to the continuous intertwining of past achievement, present activity and future aspirations – the constituents of any human culture.

The curriculum is interdisciplinary, designed for the adult seeking intellectual challenge. Colloquia are conducted by two faculty members from different academic areas, and are concerned with an

historical period or a seminal idea. Seminars are given by a single instructor and are more particular in focus. Independent study enables students to pursue their own interests. All courses are conducted as part of a continuing dialogue between students and faculty, stressing the relevance of our cultural tradition to the problems and issues of contemporary American life.

Although the orientation of the program is toward Western thought, opportunity to pursue threads of investigation into other cultures is available and is encouraged.

### Requirements for the degree Master of Arts in Humanities

Each student must accumulate 45 hours of credit including the writing of a thesis. Transfer credit will be given where appropriate. The program should include at least seven colloquia and at least four seminars. It must include HU 606, Humanism and Its Methodology.

# Industrial Engineering

**Coordinator:** William S. Gere Jr., Associate Professor of Industrial Engineering, Ph.D., Carnegie-Mellon University

The Master of Science in industrial engineering is considered a fifth-year or a professional degree, and is designed to provide a broad background in operations research, man-machine systems, and human factor analysis to students with undergraduate engineering or technical degrees from ECPD accredited schools.

### Requirements for the degree Master of Science in industrial engineering

The basic program consists of 48 credit hours. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin. Required courses may be waived on the basis of undergraduate courses taken at accredited institutions. All waivers must be approved in writing by the Department of Industrial Engineering, and are conditional

upon subsequent academic performance. In some cases, the program coordinator may permit substitution of relevant courses in place of the required courses.

### SEMINAR PROJECT

The program requires all students to complete IE 690, Seminar Project. This requirement is met by the preparation of a relevant seminar project report, prepared under the direction of a faculty adviser. The complete and final manuscript must be submitted to the project adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree. For further specifications see Research Project, Seminar Projects and Independent Study requirements detailed elsewhere in this bulletin. It is suggested that a student begin work on the seminar project after having completed at least 15 credit hours.

In certain cases, students who routinely complete projects similar to the required Seminar Project as a part of their professional duties may petition to satisfy the Seminar Project requirement by taking two advanced industrial engineering electives in place of the project. Such a substitution must have the prior written approval of the program coordinator.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| IE | 601 | Introduction to Operations Research/ Management Science | 3 |
| IE | 607 | Probability Theory | 3 |
| IE | 603F | Introduction to Digital Computers (FORTRAN) | 3 |
| EC | 604 | Macroeconomic Analysis, *or* | |
| EC | 603 | Microeconomic Analysis | 3 |
| IE | 651 | Human Engineering I | 3 |
| IE | 602 | Quality Analysis | 3 |
| EC | 625 | Industrial Relations | 3 |
| P | 619 | Organizational Behavior, *or* | |
| P | 620 | Industrial Psychology | 3 |
| IE | 690 | Seminar Project | 3 |
| | | Electives (IE or Math Courses) | 9 |
| | | Electives | 12 |
| | | | 48 |

# Industrial Relations

**Coordinator:** Robert J. Dworak, Professor of Public Administration, D.P.A., University of Southern California

Industrial relations, as a social and behavioral science discipline, is the field of study concerned with all aspects, both macro and micro, of the employment relationship. As an applied organizational and societal function, industrial relations is the profession concerned with the management of the aggregate manpower resources available for, or engaged in, the employment relationship.

As both an academic discipline and a profession, industrial relations is an interdisciplinary problem-solving field which attempts to resolve conflicts among four major parties to the employment relationship – employers, employees, unions and government.

The field of industrial relations has been growing rapidly and is becoming increasingly important for the effective functioning of almost all kinds of organizations. More and more companies and institutions have created activities requiring the services of personnel conversant with the large body of tools and knowledge which has been generated in the field in the past two decades.

The program will aim to present the knowledge and the skill needed to provide employment opportunities in various kinds of organizations in the fields of employee procurement, development, wage and salary administration, employee services and benefits, safety, labor-management relations, job and organization structuring, labor economics, supervision and manpower planning. The program will also establish the foundation for advanced study and research.

The interdisciplinary orientation of the MS in industrial relations program is emphasized in the required courses which are drawn from economics, management and psychology. It will be further supported in the program's concentration electives which will be drawn from economics, industrial engineering, management, political science, psychology, public administration and quantitative analysis.

## ADMISSION POLICY

Admission is open to persons holding a baccalaureate degree from an accredited institution of higher education. The undergraduate degree should preferably, but not exclusively, be in the social and behavioral science (i.e., economics, history, political science, psychology, or sociology), business administration or public administration. Admission is also open to full-time employed professionals in personnel and industrial relations holding a baccalaureate degree in any field from an accredited institution.

Though admission decisions are based primarily on an applicant's undergraduate record, the promise of academic success is the essential

factor for admission. Any applicant may be required to complete selected undergraduate courses with a grade of B or better as a condition of admission. Before matriculating a student may be required to submit scores from either the Graduate Management Admissions Test (GMAT), the Graduate Record Examination (GRE), or the Miller Analogies Test. To demonstrate that they have acceptable communication skills, persons may be required to submit a writing sample and to have a personal interview with the industrial relations program coordinator. Finally, applicants are expected to possess personal attributes which will support success in the personal and industrial relations profession.

## Requirements for the degree Master of Science in industrial relations

A minimum total of 39 graduate credit hours is required for the Master of Science degree in industrial relations. Of these 39 graduate credit hours, 21 graduate credit hours are in approved industrial relations elective courses. Prior to registering for elective courses, the student must secure written approval of the industrial relations program coordinator.

Candidates for the MS in industrial relations should be familiar with the use of statistics in solving problems and decision making. Knowledge of statistics is assumed in the advanced courses in the industrial relations program. For students without this background, this prerequisite may be met by taking a course in probability and statistics as a prerequisite.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| MG 637 | Management | 3 |
| P 619 | Organizational Behavior | 3 |
| EC 625 | Industrial Relations | 3 |
| EC 627 | Economics of Labor Relations | 3 |
| EC 687 | Collective Bargaining | 3 |
| MG 678 | Personnel Management Seminar | 3 |
| MG 679 | Industrial Relations Seminar | 3 |
| | IR core course credits | 21 |
| | IR approved electives | 18 |
| | Total credits for degree | 39 |

# Mechanical Engineering

**Coordinator:** Richard J. Greet, Associate Professor of Mechanical Engineering, Ph.D., Harvard University

This program is intended to meet the needs of professionally employed engineers and scientists for academic work beyond the baccalaureate level. It has been designed to increase competence in modern analysis and synthesis techniques as they apply to engineering design.

The program centers on a core sequence which all students are expected to take. The core courses contain advanced methods of analysis and design which are of common interest in engineering work. Students complete the program by electing a series of courses in mechanical engineering which is particularly suited to their current professional interests. Early in the program, students, with the approval of their advisers, prepare a detailed plan insuring an overall educational experience that is integrated and logical.

All decisions regarding both core and elective requirements are subject to final approval of the student's adviser.

## Requirements for the degree Master of Science in mechanical engineering

A minimum of 39 credits must be completed to earn the Master of Science degree in mechanical engineering. The transfer credit from other institutions will be permitted subject to the Graduate School policy on transfer credit. Thesis topics should be approved by the faculty adviser when the student has completed 18-21 graduate credits. Thesis preparation and submission must comply with Graduate School policy on thesis with the final manuscript submitted to the adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree.

## Program of study

REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| M 624 | Applied Mathematics | 3 |
| ME 602 | Boundary Value Problems | 3 |
| ME 603 | Approximation Methods | 3 |

| | | |
|---|---|---|
| ME 604 | Numerical Methods, *or* | |
| M 620 | Numerical Analysis | 3 |
| ME 615 | Theory of Elasticity | 3 |
| ME 625 | Mechanics of Continua | 3 |
| ME 630 | Advanced Fluid Mechanics | 3 |
| ME 698-699 | Thesis | 6 |
| | Electives | 12 |
| | | 39 |

**ELECTIVE COURSES**

| *Course number and title* | | *Credit* |
|---|---|---|
| ME 610 | Advanced Dynamics | 3 |
| ME 611 | System Vibrations | 3 |
| ME 620 | Classical Thermodynamics | 3 |
| ME 622 | Statistical Thermodynamics | 3 |
| ME 627 | Plasticity | 3 |
| ME 628 | Modern Materials | 3 |
| ME 632 | Advanced Heat Transfer | 3 |
| ME 635 | Advanced Turbomachinery | 3 |
| ME 640 | Combustion | 3 |
| ME 645 | Computational Fluid Dynamics and Heat Transfer | 3 |
| ME 660 | Advanced Design Philosophies | 3 |
| ME 670 | Special Topics – Mechanical Engineering | 3 |
| ME 695 | Independent Study I | 3 |

# Operations Research

**Coordinator:** William S. Gere Jr., Associate Professor of Industrial Engineering, Ph.D., Carnegie-Mellon University

The Master of Science in operations research curriculum provides thorough coverage of the theory, methodology and application of the techniques of operations research and systems analysis. The program is designed to prepare qualified applicants from diverse backgrounds to deal with major social, industrial and business problems.

## Requirements for the degree Master of Science in operations research

The basic program consists of 48 credit hours. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin. Required courses may be waived on the basis of undergraduate courses taken at accredited institutions. All waivers must be approved in writing by the Department of Industrial Engineering, and are contingent upon subsequent academic performance. In some cases, the coordinator may permit substitution of relevant courses in place of the required courses.

### SEMINAR PROJECT

The Master of Science in operations research program requires all students to complete IE 690, Seminar Project. This requirement is met by the preparation of a relevant seminar project report, prepared under the direction of a faculty adviser. The complete and final manuscript must be submitted to the project adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for his degree. For further specification see Research Projects, Seminar Projects and Independent Study requirements detailed elsewhere in this bulletin. It is suggested that a student begin work on the seminar project after having completed at least 15 credit hours.

In certain cases, students who routinely complete projects similar to the required Seminar Project as a part of their professional duties may petition to satisfy the Seminar Project requirement by taking two advanced industrial engineering electives in place of the project. Such a substitution must have the prior written approval of the program coordinator.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| IE | 601 | Introduction to Operations Research/ Management Science | 3 |
| IE | 603 F | Introduction to Digital Computers (FORTRAN) | 3 |
| IE | 607 | Probability Theory | 3 |
| M | 610 | Fundamentals of Calculus and Linear Algebra | 3 |
| EC | 604 | Macroeconomic Analysis, *or* | |
| EC | 603 | Microeconomic Analysis | 3 |
| IE | 621 | Linear Programming | 3 |

| | | | |
|---|---|---|---|
| IE | 622 | Queuing Theory | 3 |
| IE | 685 | Theory of Optimization | 3 |
| IE | 686 | Inventory Analysis | 3 |
| IE | 688 | Design of Experiments | 3 |
| IE | 690 | Seminar Project | 3 |
| | | Electives (I.E., Math, or E.E.) | 6 |
| | | Electives | 9 |
| | | | 48 |

# Organizational/Industrial Psychology

**Coordinator:** Dennis Courtney, Associate Professor of Psychology, Ph.D., Ohio State University

The Master of Arts in organizational/industrial psychology is designed as an interdisciplinary program leading to the development of expertise in the application of psychology for men and women involved in supervisory roles and for those planning such professional careers. The program emphasizes both the principles and procedures of psychology and the perspectives of other disciplines in preparing the student to meet organizational problems in their full complexity. Approximately two dozen top industrialists have agreed to assist the department in the continuing development of the program.

The program further strives to:

1. familiarize the student with contemporary research and publications concerned with mutual relationships between organizational characteristics and the employee's behavior;
2. provide the student with an improved understanding of psychological findings relating to personnel counseling, test administration and interpretation for selection, transfer, and promotion as well as management development;
3. enhance the student's knowledge of current psychological information and skills relating to human-need satisfaction, executive training, organizational climate, problem solving and decision making, effective organizational change, and the study of organizationally induced stress;
4. familiarize the student with current psychological theory and findings relating to attitude measurement, personnel policy evaluation and development and management development programs;
5. meet the increasing needs of organizations for individuals with specialized research and human relations skills; and
6. provide graduate study on a late afternoon and early evening basis for the full-time employee.

## ADMISSION POLICY

Applicants are expected to possess social and interpersonal characteristics which will support success in organizational settings.

Students who give evidence of a mature interest in the application of psychological principles to organizational problems and who hold an undergraduate degree from an accredited college or university are eligible for admission.

Applicants are required to complete a questionnaire and submit it directly to the Graduate School and may be required to submit scores from either the Miller Analogies Test or the Graduate Record Examination Aptitude Test. An undergraduate major in psychology is not specifically required as a basis for consideration. However, all students are expected to have at least an introductory level understanding of psychological concepts, principles, and methods before taking courses in the Master of Arts in organizational/industrial psychology program.

# Requirements for the degree Master of Arts in organizational/industrial psychology

A total of 39 credit hours is required of candidates for the degree of Master of Arts in organizational/industrial psychology. Candidates for this degree will be required to complete 18 credit hours of required courses in the core curriculum. Another 21 credit hours of electives will be chosen after consultation with the department chairman, or a representative, in light of the student's academic and professional goals. The student may not complete more than 9 credit hours of electives until he/she has satisfied the core requirements. Up to 9 credit hours of electives may be taken in other departments, such as industrial engineering, economics, management, marketing, public administration or criminal justice.

## TRANSFER CREDIT

The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer of credit detailed elsewhere in this bulletin.

## THESIS

Students electing to write a thesis must register for P 698, Thesis I, and P 699, Thesis II. The thesis must show ability to organize materials in a clear and original manner and present well-reasoned conclusions.

The thesis is written under the direction of the faculty member in charge of the thesis seminar or a faculty member with special competence in the subject matter of the thesis. The complete and final manuscript must be submitted to the thesis adviser prior to the end of the tenth week of the term in which the candidate expects to complete the requirements for the degree. Thesis preparation and submission must comply with the Graduate School policy on Thesis/Seminar Project Requirements detailed elsewhere in this bulletin.

### PROGRAM OPTIONS

In response to the different needs and levels of preparation of students in the program, the four following options are available:

**Option 1** is recommended for an individual currently employed in a managerial or supervisory position. The practicum seminars will allow the student to investigate a specific job-related problem under expert faculty supervision.

**Option 2** affords the student with limited work experience an opportunity to serve an industrial internship, providing the student the chance to observe real organizational/industrial situations to be analyzed and discussed with a faculty supervisor.

**Option 3** will provide the student planning to pursue doctoral studies with an essential tool – the ability to do empirical research and report writing through the preparation of a thesis.

**Option 4** consists of elective courses selected under faculty advisement. The choice of electives is intended to provide the student with a broad interdisciplinary background, complementing the student's own academic training and interest.

Normally the student should not begin work on any of the first three options until he/she has completed at least four core courses.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| EC | 625 | Industrial Relations | 3 |
| P | 609 | Research Methods | 3 |
| P | 619 | Organizational Behavior | 3 |
| P | 635 | Assessment of Human Performance with Standardized Tests | 3 |
| P | 640 | Industrial Motivation and Morale | 3 |
| P | 645 | Seminar in Organizational/Industrial Psychology | 3 |
| | | Elective options (see below)* | 21 |
| | | | 39 |

ELECTIVE OPTIONS

Option 1

| | | | |
|---|---|---|---|
| P | 678 | Practicum I | 3 |
| P | 679 | Practicum II | 3 |
| | | Electives* | 15 |
| | | | 21 |

Option 2

| | | | |
|---|---|---|---|
| P | 693 | Organizational Internship I | 3 |
| P | 694 | Organizational Internship II | 3 |
| | | Electives* | 15 |
| | | | 21 |

Option 3

| | | | |
|---|---|---|---|
| P | 698 | Thesis I | 3 |
| P | 699 | Thesis II | 3 |
| | | Electives* | 15 |
| | | | 21 |

Option 4

| | | | |
|---|---|---|---|
| | | Electives* | 21 |

*The choice of electives is made in consultation with a departmental adviser in light of the student's academic and professional goals.

# Public Administration

**Coordinator:** Kenneth Fox, Assistant Professor of Public Administration, Ph.D., University of Pennsylvania

The general purpose of the Master of Public Administration degree at the University of New Haven is the training of men and women at the graduate level for public service careers. Specifically, the program strives to:

1. equip students with modern analytical and quantitative tools of decision making and their application to complex problems of government;
2. expose students to the wide range of administrative and managerial problems and responsibilities of government; and
3. increase the student's knowledge and skills in the particular management functions of budgeting, planning, public policy formulation, public finance and public personnel administration.

## Requirements for the degree Master of Public Administration

Forty-five graduate credit hours are required of candidates for this degree. Of the 15 credit hours of electives in the M.P.A. program, six credit hours may be taken in graduate courses offered in other programs such as psychology, criminal justice, economics, and industrial engineering.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | *Credit* |
|---|---|---|
| PA 601 | Principles of Public Administration | 3 |
| PA 602 | Public Policy Formulation and Implementation | 3 |
| PA 604 | Seminar in Communities and Social Change | 3 |
| EC 608 | Economics for Public Administrators | 3 |
| PA 611 | Research Methods in Public Administration | 3 |
| PA 625 | Administrative Behavior | 3 |
| PA 620 | Personnel Administration and Collective Bargaining in the Public Sector | 3 |
| PA 632 | Public Finance and Budgeting | 3 |
| PA 690 | Research Project | 3 |
| PA 693 | Public Administration Internship | 3 |
| | Electives | 15 |
| | | 45 |

### CONCENTRATIONS

Concentrations in the Master of Public Administration program are designed to provide career-oriented structure for students with well-formed career interests. The concentration in health care management is the first concentration introduced into the program. The department expects to develop additional concentrations over the next several years.

#### Health care management

Adviser: John R. Coleman, Associate Professor of Public Administration, Ph.D., University of Massachusetts

Students following the health care concentration will take the core curriculum of ten courses and follow the health care concentration of five courses for their five elective courses.

| | |
|---|---|
| PS 635 | Law and Public Health |
| MG 640 | Health Care Management |
| PA 641 | Institutional Budgeting |
| PA 643 | Health and Institutional Planning |
| | *and one course chosen from among the following:* |
| PA 642 | Health Care Delivery Systems |
| PA 644 | Administration of Programs and Services for the Aged |
| PA 645 | Health Care Economics and Finance |

# Senior Professional Certificates

This program is limited to those already holding an advanced degree who want additional graduate study in a coherent program, but do not want to work toward another advanced degree.

Since the Senior Professional Certificate is not a degree, a student may transfer credits earned for a certificate into a master's program at any time, subject to the requirements of the master's degree and the decision of the coordinator of the master's program, and to acceptance in the master's program.

Students completing work in a certificate program do not attend commencement but will receive a certificate. A petition for certification must be filed with the graduate registrar and the appropriate fee paid. When the course work is reviewed and found complete the certificate will be mailed to the student.

## Requirements for the certificate

The program consists of 15 or 18 credits, depending upon the area chosen. Students, having chosen their area of study, should contact the adviser who is listed for that particular area.

## Programs of study

Ten different certificates are offered. Three certificate programs allow options to choose a particular speciality. The programs are the following:

Accounting and Taxation
- I: Financial Accounting
- II: Managerial Accounting
- III: Taxation

Applications of Psychology
Computer Applications and Information Systems
Economic Forecasting
Finance
General Management
International Business
Marketing
- I: Marketing
- II: Quantitative Techniques in Marketing

Public Management
- I: Survey of the Field
- II: Urban and Regional Planning and Management
- III: Public Personnel Management

Quantitative Analysis

## Accounting and Taxation

Adviser: Jeffrey L. Williams, Associate Professor of Accounting, C.P.A., C.M.A., M.B.A., University of Bridgeport

### Option I: Financial Accounting

| | | | |
|---|---|---|---|
| A | 650 | Advanced Accounting Theory | 3 |
| A | 654 | Financial Statements: Reporting and Analysis | 3 |
| | | *and any three from the following:* | |
| A | 651 | Financial Accounting Seminar | 3 |
| A | 652 | Advanced Auditing | 3 |
| A | 653 | Accounting for the Not-for-Profit Organization | 3 |
| A | 656 | International Accounting | 3 |
| | | | 15 |

### Option II: Managerial Accounting

| | | | |
|---|---|---|---|
| A | 621 | Managerial Accounting | 3 |
| A | 650 | Advanced Accounting Theory | 3 |
| | | *and any three from the following:* | |
| A | 641 | Accounting Information Systems | 3 |
| A | 642 | Operational Auditing | 3 |
| A | 661 | Managerial Accounting Seminar | 3 |
| FI | 615 | Finance | 3 |
| | | | 15 |

**Option III:**
**Taxation**

| | | | |
|---|---|---|---|
| A | 601 | Federal Income Taxation I | 3 |
| A | 602 | Federal Income Taxation II | 3 |
| A | 604 | Corporate Income Taxation I | 3 |
| A | 605 | Corporate Income Taxation II | 3 |
| | | *and any taxation elective* | 15 |

**Applications of Psychology**

Adviser: Dennis Courtney, Associate Professor of Psychology, Ph.D., Ohio State

Students are expected to plan a sequence of courses with the faculty adviser at the start of the program. Five courses will be selected depending upon a student's interests, career objectives and academic preparation; courses are usually limited to the following:

| | | | |
|---|---|---|---|
| P | 610 | Program Evaluation in Community Psychology | 3 |
| P | 621 | Behavior Modification | 3 |
| P | 623 | Psychology of the Small Group | 3 |
| P | 627 | Attitude and Opinion Measurement | 3 |
| P | 628 | The Interview | 3 |
| P | 629 | Introduction to Counseling | 3 |
| P | 630 | Psychology of Personality | 3 |
| P | 631 | Social Psychology | 3 |
| P | 632 | Group Dynamics and Group Treatment | 3 |
| P | 633 | Problems of Drug Abuse | 3 |
| P | 634 | Personality Assessment | 3 |
| P | 636 | Abnormal Psychology | 3 |
| P | 638 | Psychology of Communication and Opinion Change | 3 |
| P | 642 | Organizational Change and Development | 3 |
| P | 650 | Ecological Psychology | 3 |
| | | Total of | 15 |

**Computer Applications and Information Systems**

Adviser: William S. Gere Jr., Associate Professor of Industrial Engineering, Ph.D., Carnegie-Mellon University

| | | | |
|---|---|---|---|
| IE | 604 | Management Systems | 3 |
| IE | 605 | Advanced Business Programming | 3 |
| IE | 610 | Computer Systems Selection | 3 |
| IE | 614 | Data Information Systems | 3 |
| IE | 684 | Multiprogramming Systems | 3 |
| | | | 15 |

## Economic Forecasting

Adviser: John Teluk, Associate Professor of Economics, M.A., Free University, Munich

| | | | |
|---|---|---|---|
| EC | 604 | Macroeconomic Analysis | 3 |
| EC | 635 | Comparative Economic Systems | 3 |
| EC | 645 | Seminar in Macroeconomic Policy | 3 |
| EC | 653 | Econometrics | 3 |
| QA | 607 | Forecasting | 3 |
| | | | 15 |

## Finance

Adviser: Jeffrey L. Williams

| | | | |
|---|---|---|---|
| FI | 615 | Finance | 3 |
| FI | 617 | Financial Institutions and Capital Markets | 3 |
| FI | 645 | Corporate Financial Theory | 3 |
| FI | 651 | Portfolio Management and Capital Market Analysis | 3 |
| | | *and any two from the following:* | |
| A | 654 | Financial Statements: Reporting and Analysis | 3 |
| FI | 619 | Monetary and Central Banking Policy | 3 |
| FI | 649 | Security Analysis | 3 |
| FI | 661 | Real Estate: Principles and Practices | 3 |
| | | | 18 |

## General Management

Adviser: William S. Y. Pan, Assistant Professor of Management Science, Ph.D., Columbia University

*any six from the following:*

| | | | |
|---|---|---|---|
| MG | 660 | Comparative Management | 3 |
| MG | 661 | Development of Management Thought | 3 |
| MG | 662 | Organization Theory | 3 |
| MG | 663 | Leadership in Organizations | 3 |
| MG | 664 | Organizational Effectiveness | 3 |
| MG | 669 | Business Policy and Strategy | 3 |
| MG | 680 | Current Topics in Business Administration | 3 |
| MG | 692 | Readings in Management | 3 |
| | | | 18 |

## International Business

Adviser: Kevin F. McCrohan, Associate Professor of Marketing, Ph.D., City University of New York

| | | | |
|---|---|---|---|
| IB | 643 | International Business Operations | 3 |
| | | *and any four from the following* | |
| EC | 620 | Economic History of Western Europe | 3 |
| EC | 660 | Economic Development of Japan | 3 |
| IB | 644 | Import and Export Business | 3 |
| IB | 645 | Structure of World Markets | 3 |
| IB | 651 | Comparative Marketing | 3 |
| IB | 652 | Multinational Business Operations | 3 |
| MG | 660 | Comparative Management | 3 |
| PS | 603 | International Law | 3 |
| | | | 15 |

## Marketing

Adviser: Kevin F. McCrohan

### Option I: Marketing

| | | | |
|---|---|---|---|
| MK | 609 | Marketing | 3 |
| | | *and any four from the following:* | |
| IB | 643 | International Business Operations | 3 |
| IB | 644 | Import and Export Business | 3 |
| IB | 651 | Comparative Marketing | 3 |
| MK | 616 | Analysis of Buyer Behavior | 3 |
| MK | 639 | Marketing Research and Information Systems | 3 |
| MK | 641 | Marketing Management | 3 |
| MK | 643 | Product Management | 3 |
| MK | 644 | Consumerism | 3 |
| MK | 645 | Distribution Strategy | 3 |
| MK | 680 | Marketing Workshop | 3 |
| | | | 15 |

### Option II: Quantitative Techniques in Marketing

| | | | |
|---|---|---|---|
| IE | 603 F | Introduction to Digital Computers: FORTRAN | 3 |
| QA | 604 | Probability & Statistics | 3 |
| | | *and any three from the following:* | |
| IE | 615 | Transportation and Distribution | 3 |
| MK | 639 | Marketing Research and Information Systems | 3 |
| MK | 641 | Marketing Management | 3 |
| QA | 607 | Forecasting | 3 |
| | | | 15 |

## Public Management

Adviser: Kenneth Fox Jr., Assistant Professor of Public Administration, Ph.D., University of Pennsylvania

### Option I:
### Survey of the Field

*any five from the following:*

| | | | |
|---|---|---|---|
| EC | 665 | Urban and Regional Economic Development | 3 |
| PA | 608 | The Legislative Process | 3 |
| PA | 611 | Research Methods in Public Administration | 3 |
| PA | 620 | Personnel Administration and Collective Bargaining in the Public Sector | 3 |
| PA | 625 | Administrative Behavior | 3 |
| PA | 630 | Governmental Accounting | 3 |
| PA | 632 | Public Finance and Budgeting | 3 |
| PA | 660 | Urban Planning: Theory and Practice | 3 |
| PA | 662 | Environmental Design | 3 |
| | | | 15 |

### Option II:
### Urban and Regional Planning and Management

| | | | |
|---|---|---|---|
| EC | 665 | Urban and Regional Economic Development | 3 |
| PA | 630 | Governmental Accounting | 3 |
| PA | 660 | Urban Planning: Theory and Practice | 3 |
| PA | 662 | Environmental Design | 3 |
| PS | 616 | Urban Government and Politics | 3 |
| | | | 15 |

### Option III:
### Public Personnel Management

| | | | |
|---|---|---|---|
| EC | 625 | Industrial Relations | 3 |
| EC | 691 | Labor Legislation | 3 |
| PA | 620 | Personnel Administration and Collective Bargaining in the Public Sector | 3 |
| PA | 625 | Administrative Behavior | 3 |

*and one from the following:*

| | | | |
|---|---|---|---|
| P | 634 | Personality Assessment | 3 |
| P | 635 | Assessment of Human Performance with Standardized Tests | 3 |
| | | | 15 |

**Quantitative Analysis**

Adviser: William S. Y. Pan

| | | |
|---|---|---|
| IE 604 | Management Systems | 3 |
| QA 604 | Probability and Statistics | 3 |
| QA 605 | Advanced Statistics | 3 |
| QA 606 | Advanced Management Science | 3 |
| QA 607 | Forecasting | 3 |
| | | 15 |

# Taxation

**Coordinator:** Jeffrey L. Williams, Associate Professor of Accounting, M.B.A., University of Bridgeport, C.P.A., C.M.A.

Society's decision to pursue collectively, through the instrument of governmental policy, a variety of economic and social goals has led to the development of a complex body of "tax law." Given the dynamic state of society's economic and social goals, and the alternative means for their accomplishment, the body of "tax law" characteristically exists in a continual state of change.

The complex and dynamic structure of "tax law" is significant not only because of its impact upon the process of accomplishing society's goals but also because of its influence upon the economic decision-making process in which society's members are constantly engaged. The tax consequences at the applicable governmental level – federal, state, and local – of economic decisions made by society's members have been and will continue to be an increasingly important consideration.

## PROGRAM OBJECTIVES

In recognition of the above, a need to prepare technically competent individuals for careers in the field of taxation has developed. Owing to the complex and dynamic nature of "tax law," it appears appropriate to conduct this preparation at an advanced level of inquiry with an emphasis upon examining the issues of current interest in taxation. Accordingly, the Master of Science program in taxation has been designed as a framework to accomplish the following structure of objectives:

1. To apprise the students of the role of "tax law" relative to social and economic policy.

2. To prepare students with approaches relative to the integration of "tax law" with the economic decision-making process.
3. To prepare the students for technical competence relative to understanding and interpreting "tax law."
4. To prepare students with approaches to independent research in taxation.
5. To familiarize students with Internal Revenue procedures.

Given the above objectives, the Master of Science program in taxation provides a framework through which advanced and timely tax training can be acquired by experienced professionals (accountants and attorneys) practicing in the field of taxation, as well as individuals seeking to prepare themselves for entry into career positions in taxation.

### ADMISSION POLICY

Admission to matriculation in the program is available to CPA's, attorneys, and persons holding an undergraduate degree from an accredited institution, preferably, but not exclusively, in accounting or in business administration with a major in accounting. Persons holding other than the above degrees will be required to take a number of selected undergraduate courses as a condition for admission. Admission is based primarily on an applicant's undergraduate record; however, the promise of academic success is the essential factor for admission. In support of their application, persons may submit their scores from the Graduate Management Admissions Test (GMAT). An applicant may be required to take this test.

## Requirements for the degree Master of Science in taxation

A minimum total of 36 credits is required for the Master of Science in taxation. The 36 credits will include 24 credits from required core courses and 12 credits from electives. The transfer of credit from other institutions will be permitted subject to the Graduate School policy on transfer credit detailed elsewhere in this bulletin.

## Program of study

### REQUIRED COURSES

| *Course number and title* | | | *Credit* |
|---|---|---|---|
| A | 601 | Federal Income Taxation I | 3 |
| A | 602 | Federal Income Taxation II | 3 |
| A | 604 | Corporate Income Taxation I | 3 |

| | | | |
|---|---|---|---|
| A | 605 | Corporate Income Taxation II | 3 |
| A | 607 | Tax Accounting | 3 |
| A | 608 | Estate and Gift Taxation | 3 |
| A | 614 | Federal Tax Practice and Procedure | 3 |
| A | 615 | Research Project in Federal Income Taxation | 3 |
| | | | 24 |

## ELECTIVE COURSES

| | | | |
|---|---|---|---|
| A | 603 | Federal Income Taxation III | 3 |
| A | 606 | Corporate Income Taxation III | 3 |
| A | 609 | State and Local Taxation | 3 |
| A | 610 | Consolidated Returns | 3 |
| A | 611 | Income Taxation of Estates and Trusts | 3 |
| A | 612 | International Taxation | 3 |
| A | 613 | Taxation of Partnerships and Partners | 3 |
| | | Four electives totalling | 12 |
| | | Total for degree | 36 |

# COURSE DESCRIPTIONS

Unless otherwise indicated, all graduate courses carry three credit hours.

## Department of Accounting

**A 600 Accounting** No Credit

The principles and procedures underlying the generation of financial accounting information.

**A 601 Federal Income Taxation I**

An introduction to tax policy and the basic principles of the federal income tax law. Coverage entails the key concepts of gross income, adjusted gross income, deductions, exemptions and credits, with special attention given to the provisions of the Internal Revenue Code affecting individual taxpayers.

**A 602 Federal Income Taxation II**

Prerequisite: A 601. A continuation of Federal Income Taxation I emphasizing the basic provisions concerning dispositions of property: analysis of basis, recognition of gain or loss, capital asset transactions and nonrecognition exchanges. Coverage extended to assignment of income theories, tax minimization and maxitax and deferred payment sales.

**A 603 Federal Income Taxation III**

Prerequisite: A 602. Advanced concepts of federal income taxation. Further study of capital gains and losses including stock options, mortgages, bootstrap sales, sale of patent rights and know-how, sale of copyrights and tax shelter and deferral techniques. Principles of income in respect of a decedent are also introduced.

**A 604 Corporate Income Taxation I**

Prerequisite: A 602. A foundation course analyzing the basic federal income provisions affecting corporations and shareholders. Course coverage includes organization of the corporation, corporate capital structure, corporate distributions, stock redemptions, bail-out techniques and liquidations.

**A 605 Corporate Income Taxation II**

Prerequisite: A 604. A detailed analysis of the federal income tax rules covering corporate reorganizations and divisions. Also discussed are some of the nontax aspects of corporate reorganizations such as S.E.C., anti-trust, and business reasons for choice of particular method.

**A 606 Corporate Income Taxation III**

Prerequisite: A 605. Advanced study in the corporate tax area including subchapter S corporations, collapsible corporations, accumulated earnings tax, affiliated corporations and carryover of corporate tax attributes.

**A 607 Tax Accounting**

Prerequisite: A 601. Investigation of such areas as: problems of allocating income and deductions to the proper tax year, permissible tax accounting methods, depreciation, inventory methods, net operating losses, installment reporting, change in accounting method and comparison of business and tax accounting principles.

**A 608 Estate and Gift Taxation**

A comprehensive introduction to, and analysis of, the federal estate and gift tax laws including basic principles of estate planning. Procedures for preparation of the estate and gift tax returns are treated. Brief coverage is also given to state death and inheritance taxes.

**A 609 State and Local Taxation**

The tax problems encountered at the state and local level by businesses engaged in interstate commerce. Federal limitations on the taxation of multi-state enterprises and jurisdictional problems are examined. Specific areas covered are: license to do business, net income, franchise, gross receipts, property, and sales and use taxes. Apportionment problems are examined in detail.

**A 610 Consolidated Returns**

Prerequisite: A 604. A thorough analysis of the federal consolidated tax return provisions including eligibility and whether to file a consolidated taxable income; intercompany transactions and deferral concepts; basis in the disposition of stock of a subsidiary; computation of earnings and profits; and mechanics of preparing the consolidated return.

**A 611 Income Taxation of Estates and Trusts**

Prerequisite: A 602. Federal income taxation of estates, trusts, grantors, and beneficiaries. Topics are simple and complex trusts, throwback rules, taxable and distributable net income, assignment of income concepts and income in respect of a decedent, preparation of the estate and trust returns.

**A 612 International Taxation**

Prerequisite: A 604. Consideration of the federal income tax treat-

ment of nonresident aliens and foreign corporations and the foreign income of U.S. residents and domestic corporations; comparison of alternative methods of engaging in operations abroad; foreign tax credit; allocations under code Section 482; Section 367 rulings; and the effect of tax treaties.

**A 613 Taxation of Partnerships and Partners**

Prerequisite: A 602. A study of the federal income tax problems encountered in the formation and operation of a partnership, including computations of taxable income, sale of a partnership interest, withdrawal of a partner, death or retirement of a partner, and distribution of partnership assets. Limited partnerships are also covered. Procedure for preparation of the partnership return.

**A 614 Federal Tax Practice and Procedure**

Prerequisite: A 601. A study of the history and organization of the Internal Revenue Service, the selection of returns for audit and the review steps at the administration level. Code provisions covered will include; filing requirements, statutory notices, restriction on assessment, statute of limitations, refund procedures, waivers, closing agreements, protests and rulings.

**A 615 Research Project in Federal Income Taxation**

Prerequisite: 15 graduate hours. This course is devoted to a study of the techniques and tools of tax research. Reference sources studies include tax looseleaf services, I.R.S. Cumulative Bulletin, court cases, Congressional Bulletin, court cases, Congressional committee reports, textbooks, published articles. A significant research paper devoted to a subject of topical interest is required.

**A 621 Managerial Accounting**

Prerequisite: A 600 or 6 more credits in accounting. Accounting analysis for the managerial functions of planning, controlling and evaluating the performance of the business firm.

**A 641 Accounting Information Systems**

Prerequisite: A 621. An examination of the function and limitations of internal accounting information systems and their relationship to other decision-oriented business information systems.

**A 642 Operational Auditing**

Prerequisite: A 621. An analysis of the principles underlying and the procedures applying the function of auditing the results of firm-related business decisions.

**A 650 Advanced Accounting Theory**

Prerequisite: 6 hrs. of intermediate accounting. Considers the theoretical aspects of accepted accounting principles and their significance as a frame of reference for the evaluation of accounting practices. Considerable attention is focused on the role of regulatory agencies and professional accounting organizations with regard to their influences upon accounting theory and practice.

**A 651 Financial Accounting Seminar**

Prerequisite: A 650. An examination and evaluation of current literature in external accounting issues and related fields.

**A 652 Advanced Auditing**
Prerequisite: 3 hours of auditing. An analysis of the contemporary problems surrounding the attest function performed by the professional independent auditor.

**A 653 Accounting for the Not-for-Profit Organization**
Prerequisite: 6 hrs. of intermediate accounting. An intensive examination of the contemporary views toward financial reporting for the not-for-profit organizations.

**A 654 Financial Statements: Reporting and Analysis**
Prerequisite: FI 651. An examination of financial reporting practices for financial statement analyses in view of modern theoretical and empirical financial decision-making research.

**A 656 International Accounting**
Prerequisite: 6 hrs. of intermediate accounting. An analysis of the literature related to the current and growing interest in the development of accounting standards for business enterprises throughout the world.

**A 661 Managerial Accounting Seminar**
Prerequisite: A 621. An examination and evaluation of current literature in internal accounting issues and related fields.

**A 670 Selected Topics**
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**A 690 Research Project**
Prerequisite: 15 graduate hours or permission of the instructor. Independent study under the supervision of an adviser.

**A 695 Independent Study I**
A planned program of individual study under the supervision of a member of the faculty.

**A 696 Independent Study II**
Prerequisite: A 695.

**A 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**A 699 Thesis II**
Prerequisite: A 698. A continuation of A 698, Thesis I.

# Department of Civil and Environmental Engineering

**CE 601 Water Treatment**
Advanced design principles and practices in water treatment processes; study of unit processes and operations; water treatment plant design; methods of population projection; water distribution systems.

**CE 602 Wastewater Treatment**
Advanced design principles and practices in sewage treatment processes; study of unit processes and operations; secondary sewage treatment plant design; sludge handling and disposal; sewage collection systems; introduction to advanced treatment methods.

**CE 605 Solid Waste Management**
Characteristics, volumes, collection and disposal of solid waste and refuse. Design of processing, recycling, and recovery equipment, landfill design and operation, resource recovery, incineration.

**CE 606 Environmental Law and Legislation**
Review and techniques of enforcement of state and federal pollution control laws and regulations; effects on waste treatment criteria and design and evaluation of municipal ordinances; preparation of environmental assessments and impact statements.

**CE 612 Advanced Wastewater Treatment**
Prerequisite: CH 601, which may be taken concurrently. Theories and principles of advanced sewage treatment including nutrient removal, demineralization, distillation, ozonation, carbon filtration, ion exchange, nitrification; design of facilities; upgrading secondary plants.

**CE 613 Industrial Wastewater Control**
Prerequisite: CH 601. Characteristics of industrial wastes, volumes, sources, types; methods of volume reduction, waste segregation, recovery, recycle, and waste treatment.

**CE 614 Water Pollution Control**
Causes and effects of pollution on marine water bodies; study of chemical, biological, and physical characteristics and responses; tidal effects; survey, sampling and modeling; dredge spoil disposal; estuarine ecology.

**CE 615 Rural and Agricultural Waste Disposal**
Handling and disposal of domestic wastewaters in rural areas; characteristics and treatment of agricultural wastewaters and waste solids; lagooning, composting, soil injection and application.

**CE 616 Ground Water Waste Disposal**
Study of effects of disposal of wastewaters in ground waters; travel of pollutants through soil; removal of nutrients and pollutants by soil interactions; leachate identification and control from refuse disposal areas.

**CE 617 Special Problems in Wastewater Management**
Solutions to problems in sewer infiltration, combined sewers and sewer separation; management techniques of sewer systems, user charges and capital cost recovery in municipal sewage collection and treatment facilities. Preparation of cost effectiveness studies.

**CE 618 Air Pollution Control**
Sources and effects of air pollution, monitoring, sampling and modeling; design of incineration devices and treatment facilities. Enforcement techniques, complex sources, computer simulation.

**CE 670 Special Topics–Civil Engineering**
A study of related topics of particular interest to students and instructor. Course may be taken more than once.

**CE 690 Research Project**
Prerequisite: 18 graduate hours or permission of chairman of the Department of Civil Engineering and adviser. Independent study under the guidance of an adviser into an area of mutual interest, each study terminating in a technical report of academic merit. Research may be in such environmental areas as water resources, stream pollution, solid waste management or air pollution.

**CE 695 Independent Study in Environmental Engineering I**
Prerequisite: permission of program coordinator. Independent study under the guidance of an adviser into an area designated by the program coordinator.

**CE 696 Independent Study II**
Prerequisite: CE 695.

**CE 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**CE 699 Thesis II**
Prerequisite: CE 698. A continuation of CE 698, Thesis I.

## Department of Chemistry

**CH 601 Environmental Chemistry**
Advanced study of the chemical reactions necessary to understand the impact that man's activities have on the environment. Areas considered include water and air pollution, power generation, and the release and use of industrial organic chemicals.

**CH 611 Special Topics in Advanced Organic Chemistry**
Advanced course dealing with topics such as stereochemistry, photochemistry, natural products and mechanisms of organic reactions.

**CH 621 Chemical Forensic Analysis with Laboratory** (4 credits)
A course intended to present advanced techniques and new developments in the identification of various materials such as pigments, dyestuffs, food additives, pharmaceutical preparations, polymers, synthetic fibers, and inorganic material products. Laboratory fee required

**CH 631 Advanced Instrumentation with Laboratory** (4 credits)
A course intended to provide background for the recent advances made in instrumentation and also to provide exposure to some of the techniques involved. Laboratory fee required

**CH 670 Selected Topics**
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**CH 695 Independent Study I**
A planned program of individual study under the supervision of a member of the faculty.

**CH 696 Independent Study II**
Prerequisite: CH 695.

**CH 698 Thesis I**
Prerequisite: Completion of 15 credits of graduate work. Periodic meetings and discussion of the individual student's progress in the preparation of a thesis.

**CH 699 Thesis II**
Prerequisite: CH 698. A continuation of CH 698, Thesis I.

## Division of Criminal Justice

**CJ 601 Seminar in Interpersonal Relations**
Interpersonal communication in teaching, supervision and in various work relationships. The criminal justice worker as a resource person and facilitator of others is stressed. Humanistic psychology and interpersonal psychology provide the theoretical base.

**CJ 602 Seminar in Social Control**
An examination of the formal and informal mechanism of controlling or conditioning the social behavior of man vis-a-vis the system of social norms, laws and institutions. The implication of organizing the system of justice under a punishment or rehabilitative ethic will be considered.

**CJ 604 Seminar in Theory and Philosophy of Law**
The theory and philosophy of law and the relationship between law and society. Emphasis on the nature of the judicial process, the issues of law and personal morality, nonvictim crimes, and the relationship of enforcement agencies to the rules of law.

**CJ 605 Social Deviance**

A survey of theories relating to the scope and nature of the crime problem. Consideration of the problems of deviancy, including social norms deviancy, mental disturbances, juvenile crime, and the various possible and actual responses to deviancy. Various approaches to the problem of rehabilitation.

**CJ 607 Seminar in Criminal Justice Institutions**

The machinery of justice in theory and practice. The rule of law and its exceptions in the actual administration of justice. Emphasis on the progressive changes in the development of children's and adolescents' courts, probation and classification clinics. Crime prevention and reforms of the criminal law. Special problems of justice and the poor. Administrative denials of justice, the insane offender, the white-collar criminal and social reconstruction through law.

**CJ 608 Law and Evidence**

Comprehensive analysis of the rules of evidence. Topics include judicial notice, presumptions, the nature of real and circumstantial evidence, hearsay evidence, confessions and admissions and witnesses. Emphasis on evidence in criminal cases.

**CJ 609 Criminological Theory**

An analytical review of the multidisciplinary theories of criminal behavior. The impact of various theoretical constructs and concepts on practice will be critically evaluated.

**CJ 610 Administration of Justice**

A study of all the steps of the criminal justice system from the time the accused is arrested until sentencing to a correctional facility with an objective to review all the problems which arise during this process and to consider some possible solutions which will benefit the individual being processed without subverting the purposes of the process.

**CJ 612 Concepts and Issues in Police Administration**

The development of the theory and practice of police administration in the United States. Significant developments and ideas of those who have made major contributions to American police administration.

**CJ 613 Alternatives to Prosecution**

Areas to be covered will be the history, theory and practice of pretrial diversion, as well as the legal, social and administrative problems inherent in diversionary approaches. Among the specific alternatives to be examined will be: youth service bureaus, family courts, citizen dispute settlement, community responsibility programs and various pre-trial intervention programs.

**CJ 615 Forensic Science in the Administration of Justice**

The role of natural science in the administration of justice in its broadest aspects. Current concepts, present status and future needs of the forensic sciences. Specific topics in the forensic sciences and their interrelationships with legal issues will also be included.

**CJ 617 Correctional Administration**

Prerequisite: CJ 610. The basic organization and objectives of a de-

partment of correction. Specific administrative principles required for effective conduct and operation of a correctional organization.

**CJ 618 Probation and Parole: Theory and Practice**

The philosophy, theory and methods employed in probation, parole and institutional treatment of the offender. The role of authority, casework, classification, treatment policy and administrative organization in determining the consequences of correctional practice.

**CJ 619 Seminar in Comparative Criminal Justice Systems**

Prerequisite: CJ 610. A cross-cultural study of police, court and correctional systems and methods.

**CJ 620 Sociology of Criminal Law**

A study of the social origins and consequences of criminal law and legal processes. Emphasis on problems of legal change and the structure and functioning of legal sanctions. Emphasis on social and institutional pressures in creating socio-legal policy.

**CJ 622 Learning Theory: Applications in Criminal Justice**

Applications of the psychology of learning to police and correction settings.

**CJ 624 Group Process in Criminal Justice**

Small group interaction; both theoretical and experimental facets of group process are presented. Group counseling and encounter groups.

**CJ 628 Introduction to Systems Theory**

Concepts of systems theory and systems analysis in contemporary socio-technical environments.

**CJ 630 Delinquency and Juvenile Crime**

A general introduction to the field of delinquency and crime, including all aspects of the social, legal and personal matrix out of which these forms of behavior emerge. Special emphasis will be given to the process and implications of delinquency labeling.

**CJ 635 Statistics in the Public Sector**

Statistical techniques applied to the public sector. Descriptive statistics: measures of central tendency and variability. Introduction to statistical inference including sampling distributions and tests of significance. Some techniques of nonparametric statistics, multiple regression and elementary decision theory. Analysis of variance and covariance.

**CJ 637 Contemporary Issues in Criminal Justice**

Topics selected by students relating to current issues and concerns in the field of criminal justice. Each student will be required to write a paper and deliver an oral presentation on a selected topic.

**CJ 642 Research Techniques in the Social Sciences**

Research methodology as applied to problems and issues in the field of criminal justice.

**CJ 644 Police in Urban Society**

An introduction to some of the current thinking and problems of policing in urban society. The course will examine such issues as the historical growth of the police, the role and mission of the police, measurement of the police tasks, police corruption and other topics of interest to the seminar members. The course will stress the development of analytic thinking in defining and dealing with police problems.

**CJ 647 Advanced Criminalistics I** (4 credits)

The comparison and individualization of physical evidence by biological and chemical properties is presented in lectures and carried out in the laboratory. The theories and practice of microscopic, biological, immunological and chemical analysis are applied to the examination of blood, saliva, semenal fluid, hair, tissues, botanical evidence and other material of forensic interest.

Laboratory fee required

**CJ 648 Advanced Criminalistics II** (4 credits)

Advanced microscopic, chemical and instrumental methods will be introduced with extensive "hands-on" experience provided by a laboratory section. Principles and methods of analysis of microscopic and macroscopic evidence such as glass, soil, papers, inks, dyes, paints, varnishes, explosives, fibers, drugs and other potential physical traces will be discussed in class.

Laboratory fee required

**CJ 651 Problems in the Administration of Justice**

A study of the interaction between the law enforcement official and the accused beginning with detention and/or arrest, during which time the official is seeking to secure incriminating evidence effectively while still protecting the Fourth, Fifth and Sixth Amendment constitutional rights of the "presumed innocent" accused.

**CJ 655 Bureaucratic Organization of Criminal Justice**

Prerequisite: CJ 610. Through an application of modern organizational theory, a critical analysis of criminal justice agencies will be made. Emphasis will be placed on viewing criminal justice in theoretical perspective. Linkages between theory and operationalization of principles will be made.

**CJ 657 Physical Analysis in Forensic Science** (4 credits)

The classic firearms examination, classification and comparison of bullets and cartridges, toolmarks comparison and striation analysis, serial number restoration, document examination, voice print identification, fingerprints and polygraphy examination.

Laboratory fee required

**CJ 658 Psychiatry and the Law**

An examination of issues that relate to the interaction between the law and mental illness and the general role of forensic psychiatry.

**CJ 659 Biomedical Methods in Forensic Science** (4 credits)

Methods and application of modern toxicology, biochemistry, pathology, dentistry and medicine in forensic science.

Laboratory fee required

**CJ 670 Selected Issues**
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**CJ 672 Innovative Treatment Programs in Corrections**
The theory and practice of a wide range of innovative correctional treatment modalities will be analyzed. Students will be given the opportunity to participate in various experiential exercises and to develop and propose new treatment approaches.

**CJ 690 Research Project I** (1 – 3 credits)
Individual guidance on a research endeavor.

**CJ 691 Research Project II** (1 – 3 credits)
Prerequisite: CJ 690.

**CJ 693 Criminal Justice Internship I**
The student's formal educational development will be complemented by field placement experience in various criminal justice settings or agencies. Field experience will be supervised by designated agency and departmental personnel.

**CJ 694 Criminal Justice Internship II**
Prerequisite: CJ 693.

**CJ 695 Independent Study** (1 – 3 credits)
Student will engage in a directed independent learning experience, the topic and format to be agreed upon by the student and supervising faculty.

**CJ 697 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress toward the completion of the thesis.

**CJ 698 Thesis II**
Prerequisite: CJ 697. A continuation of CJ 697, Thesis I.

**CJ 699 Thesis III**
Prerequisite: CJ 698. A continuation of CJ 698, Thesis II.

## Department of Communication

**CO 601 Basics of Business Media Production Techniques**
This course will provide a survey of the implementation of various media in the production of instructional and promotional materials specifically for the small and medium business and corporate media departments. The course will emphasize both theoretical and practical problems of audio and visual systems available to the business situation, paying particular attention to the vocabulary and skills which make it possible to transfer an idea from the board room to an effective media presentation. Laboratory fee required.

**CO 605 Planning Audio Visual Systems for Business**

Prerequisite: CO 601. This course will use the technology learned in the basic course, and apply this to the planning of an audiovisual center within a business or corporation setting. Students will be involved in projects of design and budget.

**CO 609 Scripting the Media Presentation**

This course is designed to show the student how to select the medium appropriate to the message, write a treatment, develop a story board, script the message and use proper format.

**CO 613 Media Presentations for Business**

Prerequisite: CO 601, CO 609. This course is designed to provide the student with an opportunity to produce a major instructional or promotional media project for a specific business or corporation. The student will be responsible for finding a sponsor for this project which will be produced in one or any of the audio/visual formats discussed and practiced in prerequisite courses.

Laboratory fee required

**CO 621 The Communication Process**

Major emphasis on the role of communication in a democracy and the effects of communication content. Brief treatment of content analysis techniques, person-to-person communication and barriers to the flow of communication.

**CO 670 Selected Topics**

Prerequisite: permission of the adviser. An in-depth examination of a topic in the field of communication which reflects the special research of a faculty member, or the special interest of a group of students.

**CO 693 Internship**

A program of field experience set up by the student and approved by the program adviser under the tutelage of a professional in the field.

**CO 695 Independent Study I**

A planned program of individual study or research in communication under the supervision of a member of the faculty.

**CO 696 Independent Study II**

Prerequisite: CO 695.

**CO 698 Thesis I**

Prerequisite: 15 graduate hours. Periodic meetings with the adviser of the individual student's progress in the preparation of a thesis.

**CO 699 Thesis II**

Prerequisite: CO 698. A continuation of CO 698, Thesis I.

## Department of English

**E 600 The Uses of Language** No Credit

Limited to qualified international students who speak a language other than English. Emphasis upon conversation, pronunciation, composition and laboratory work in the English language.

## Department of Economics

**EC 600 Basic Economics** No Credit

A basic theoretical foundation for students who have a deficiency in economics. The course is a review and refresher of basic economic principles.

**EC 603 Microeconomic Analysis**

Prerequisite: undergraduate Principles of Economics or EC 600, Basic Economics. Topics in resource allocation and price determination. Theories of choice of consumers, firms, resource owners under monopoly, monopsony, competition and alternative market forms.

**EC 604 Macroeconomic Analysis**

Prerequisite: undergraduate Principles of Economics or EC 600, Basic Economics. An examination of the roles of consumption, investment, government finance and money influencing national income and output, employment, the price level and rate of growth. Policies for economic stability and growth.

**EC 608 Economics for Public Administrators**

An examination of the roles of consumption, investment, government expenditure and money influencing national income, output, employment and price level, and growth rate. Special emphasis upon the roles of fiscal and monetary policy and the economics of contemporary social problems.

**EC 620 Economic History of Western Europe**

A survey of the economic development of western Europe from 1500 to the present. Topics covered include mercantilism, industrialization, imperialism and the emergence of planned economics.

**EC 625 Industrial Relations**

A survey of the problems, strategies and policies of management and unions in conflict situations and in harmonizing labor-management relations. Labor legislation, collective bargaining and alternative strategies, productivity and other problem areas in labor-management relations are examined.

**EC 627 Economics of Labor Relations**

A survey of labor economics and the economics of labor relations

using both the tools of economic analysis and institutional analysis. The emphasis is on the application of economics to labor problems and labor-management relations.

**EC 629 Public Policies Toward Business**

Prerequisite: EC 603-604. A survey of the economic aspects of governmental and business relations. Emphasizes the concept of public control over certain types of business and certain forms of business activity. Combination movements, pricing procedures, anti-trust laws and agencies enforcing them, regulation of transportation and public utilities, rate-making for transport, pricing public utility services, consumer protection and social responsibility.

**EC 630 Structure of American Industry**

An examination of several major U.S. industries such as automobiles, steel, petroleum, defense and agriculture. Some contemporary problems are analyzed. A study of the powerful economic forces acting on these industries and how firms react to these forces.

**EC 635 Comparative Economic Systems**

Prerequisite: EC 603-604. Capitalism, Socialism, Communism and other economic systems will be examined with respect to their theoretical foundations and practical applications, including the interrelationships among economic, political and social institutions.

**EC 641 International Economics**

Prerequisite: EC 603-604. A study of the basic theory and major institutions of international economic relations. Examines critically the techniques and background of protectionism and free trade, and the analysis of customs, unions and price and exchange rate changes. The theory of comparative advantage; the gains from trade and the terms of trade. The balance of payments and national income. Capital movements and economic growth. The evolution of the world economy and international economic institutions. Effects of growth on trade, and trade on growth. Monopolisitc practices in international trade. The international monetary system and international monetary reforms.

**EC 645 Seminar in Macroeconomic Policy**

Prerequisite: EC 603-604. The impact of fiscal and monetary policy upon employment, output and prices. An analysis of past and current economic controls and their impact upon the economy.

**EC 653 Econometrics**

Prerequisites: EC 603-604, QA 604-605, or permission of the instructor. A presentation of the important statistical concepts used in econometrics. Topics covered are regression theory, multiple regression, regression extensions, correlation, serial correlation, correlated regressor and error, the identification problem, selected estimating techniques.

**EC 658 Transportation Economics**

Prerequisite: EC 603-604. A study of the principal economic problems arising in connection with the development and regulation of railroads and other modes of transport.

**EC 660 Economic Development of Japan**
Prerequisite: EC 603-604. A study in the modernization and economic growth of modern Japan since the Meiji Restoration (1869). Topics include the role of government and planning, and of foreign trade, investment and technology; resource allocation, economic organization, capital formation, agricultural policies, population growth and social change.

**EC 665 Urban and Regional Economic Development**
Prerequisite: EC 603-604. Structure of the urban and regional economy; goals, processes, problems and policy in urban and regional economic development.

**EC 668 Economics of Crime**
Prerequisite: EC 603-604. Topics include the economic costs of crime; the costs of preventing crime; the impact of white collar crime on American society.

**EC 670 Selected Topics**
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**EC 687 Collective Bargaining**
Prerequisite: EC 625. Emphasis on the negotiating process. The labor contract as it involves wages, worker security, management authority and handling of grievances arising during the life of the contract.

**EC 690 Research Project**
Prerequisite: 15 graduate hours or permission of the instructor. Independent study under the supervision of an adviser.

**EC 692 Readings in Economics**

**EC 695 Independent Study I**
A planned program of individual study under the supervision of a member of the faculty.

**EC 696 Independent Study II**
Prerequisite: EC 695.

**EC 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**EC 699 Thesis II**
Prerequisite: EC 698. A continuation of EC 698, Thesis I.

# Department of Electrical Engineering

**EE 601 Engineering Analysis I**

Application of multidimensional linear vector space concepts to the analysis and synthesis of engineering systems. Topics include matrices, linear transformations, orthogonality, function spaces and the resolutions of signals.

**EE 602 Engineering Analysis II**

Applications of the methods of complex variables and their analytic functions to engineering systems. Topics include analytic function theory, conformal mapping, transform methods and transfer functions.

**EE 603 Discrete and Continuous Systems I**

Prerequisite: EE 601. Discrete and continuous linear system models. State variable representation and transfer function representation. Feedback control systems, stability, performance and design criteria. State variable and compensation synthesis. Nonlinear systems, describing functions and phase plane techniques. Stability methods of Liapunov.

**EE 604 Discrete and Continuous Systems II**

Prerequisite: EE 603.

**EE 605 Modern Control Systems**

Prerequisite: EE 604. Advanced topics in control systems. May include optimal control, dynamic programming, variational approaches, adaptive control, sampled data systems, signal modulated systems, random signal methods.

**EE 608 Computer-Aided Design**

Prerequisite: EE 601. Numerical algorithms for engineering systems analysis. The design problem and performance measures. Optimization of networks and filters. Parameter sensitivities. Device modeling and equivalent circuits.

**EE 615 Computer Logic and Intelligence**

Prerequisite: IE 603 (or equivalent). Introduction to logic elements and to their application in digital networks for processing numerical data. The course will deal with analysis and design techniques and will include the following topics: logic variables, switching functions, optimal realizations, Karnaugh maps and tabular procedures, multivariable systems. Detailed consideration of coding, parity bit redundancy and error detecting and correcting schemes will be presented. Design examples will include logic circuits for addition, multiplication, counting, parity generation and detection.

**EE 630 Electronic Instrumentation I**

Prerequisite: permission of instructor. Design of modern electronic instrumentation. Circuit and system examples, critical evaluation and design techniques. Emphasis on practical applications including design theory and the circuit techniques used in linear integrated devices. Variety of electronic instrumentation including computer interfaces, signal conditioners, waveform generators and shapers, filters, V/F, A/D, D/A converters and other special purpose circuits.

**EE 631 Electronic Instrumentation II**
Prerequisite: EE 630.

**EE 634 Digital Signal Processing I**
Prerequisite: EE 603. A study of the theories of digital signal processing and their applications. Topics include discrete time signals, Z transform, the discrete Fourier Transform, the FFT, digital filter design techniques, homomorphic signal processing and various applications of digital signal processing.

**EE 635 Digital Signal Processing II**
Prerequisite: EE 634.

**EE 640 Computer Engineering I**
A study of the structure and organization of PDP 11-10 computer. Operating system, peripheral devices, addressing memory, assembler instruction set, programmed requests, real-time software modules, assembler language programming.

**EE 641 Computer Engineering II**
Prerequisite: EE 640. Applications of computers to physical systems for monitor control functions. Interfacing using hardware modules. Case studies may include synchronous motor transient studies, shock wave phenomena, dynamic chemical reaction monitoring and control, signal processing, sampled data control systems. Students must complete a project.

**EE 645 Power Systems Engineering I**
Prerequisite: permission of instructor. Concepts and methods of analysis and design of modern power systems will be treated. This will include the network representation of power systems, matrix methods, symmetrical components and the use of the computer in the solution of problems such as short circuit fault calculations, load flow study, economic load dispatching and stability. Other topics may include protection, relaying or transmission system design.

**EE 646 Power Systems Engineering II**
Prerequisite: EE 645.

**EE 650 Random Signal Analysis**
A study of the theory of random signals and processes. Topics include a review of probability, random signals, auto and cross correlation, power density, spectral analysis of random signals.

**EE 658 Microprocessors – Theory & Applications**
Prerequisite: EE 640. A study of the techniques and methods of designing digital systems using a microprocessor as the basic unit. Microcomputer assembly language, operating systems, input/output devices, programmable read-only memories and interfacing. Students must complete a project.

**EE 670 Special Topics – Electrical Engineering**
Prerequisite: permission of instructor. A study of selected topics of particular interest to students and instructor. Course may be taken more than once.

**EE 695 Independent Study I**
Prerequisite: permission of instructor. A planned program of individual study or research under the supervision of a faculty member.

**EE 696 Independent Study II**
Prerequisite: EE 695.

**EE 698 Thesis I**
Prerequisite: completion of 15 credits of graduate work. Individual student project under supervision of faculty adviser. Written and oral report required. Student must enroll in 6 credits of thesis.

**EE 699 Thesis II**
Prerequisite: EE 698. Continuation of EE 698, Thesis I.

## Executive M.B.A. Program

**EXID 903 The Communication Process**
Communication needs in corporate staff development: cohesion, cooperation, and consensus through effective communication management. The role of communication in thought processes and problem solving.

**EXID 906 The Management Process**
The role of executives and managers in administrative and operational processes. Topics include organizational goals and structure, planning and performance controls and resource management.

**EXID 909 Business and Government Relations**
Recent developments and future directions of the business and government interface. Includes contracts, affirmative action, labor negotiation machinery, regulatory agencies and anti-trust legislation.

**EXID 912 Financial Accounting**
Analysis of the objectives, standards and methods embodied in the financial accounting information system. Emphasis is upon financial reporting standards as they relate to financial position, results of operations and changes in financial position.

**EXID 915 Quantitative Decision Making**
Examination of statistical methods and their relevance to decision making under uncertainty. Includes an introduction to probability, elements of statistical decision theory and Bayesian analysis.

**EXID 918 Managerial Economics**
Application of economic analysis to business forecasting, planning and policy formation. Topics include cost-benefit analysis, cost estimation and break-even analysis.

**EXID 921 Executive Development Seminar**

Examination of a variety of methods of executive development. Role-playing, business games, sensitivity training and transactional analysis.

**EXID 924 Financial Management I**

Analysis of financial decision models for investment, financing and dividend decisions of the profit-oriented firm. Includes capital budgeting, capital structure and the cost of capital and dividend policy.

**EXID 927 Financial Management II**

Analysis of financial decision models for the management of working capital. The management of current assets and the related financing mixture.

**EXID 930 Marketing Management**

The marketing concept and corporate decision making with respect to product planning, advertising and promotion, sales management, distribution channels and price policies.

**EXID 933 International Business Seminar**

Examination of the theory of international trade, exporting and importing, cultural dynamics and comparative management and marketing systems.

**EXID 936 Logistics and Distribution**

The design, administration and control of product flows. The importance of total cost planning and alternate channel strategies.

**EXID 939 Operations Research and Management**

Analysis of management science techniques from the executive perspective. Focus on understanding the value of inventory and systems models, forecasting methods and simulation techniques.

**EXID 942 Managerial Accounting**

Examination of accounting tools for planning, controlling and evaluating the economic performance of the firm. Topics include budgeting, flexible budgets, standard costs, contribution reporting, responsibility accounting and decision analysis.

**EXID 945 Human Resource Management**

The effective management of the aggregate human resource in the modern organization. Analysis of personnel policies and procedures, manpower planning and employee training and policies.

**EXID 948 Labor-Management Relations**

Contemporary issues in labor-management relations are analyzed including collective bargaining, grievance-arbitration procedures and the expanding impact of organized labor on manpower management.

**EXID 951 Marketing Management Seminar**

Current issues and topics in marketing management. Includes recent regulatory rulings, consumerism and related areas.

**EXID 954 Organizatinal Development**

Various methods for effective organizational development in contemporary environments. Analysis of means to improve existing organizations in consideration of past history and changing value structures.

**EXID 957 Corporate Policy and Strategy**

Analytical frameworks are developed through the study of major corporate policies and strategies. Focus is upon the total organization and comprehensive operation procedures of the complex corporation.

**EXID 960 The Executive Seminar**

The capstone course of the program. Four separate one-meeting topics such as reducing executive stress, increasing effectiveness, the executive role in business and society, etc.

## Courses in Finance
## Department of Accounting

**FI 615 Finance**

Prerequisites: EC 603-604, QA 604, A 600 or equivalent. The investment, financing and valuation of business firms. Topics include: discounted cash flow, return on investment, investment decisions under uncertainty, long- and short-term sources of funds, optimal financial structure, cost of capital, dividend policy, expansion, merger and failure and reorganization.

**FI 617 Financial Institutions and Capital Markets**

Prerequisites: EC 603-604, QA 604. This course stresses the relationship between the financial system and the level, growth, and stability of aggregate economic activity. Analyzes the institutional and theoretical structure of monetary change and the manner in which financial institutions and markets transmit and influence the impact of monetary policy. Special attention to the role of nonmonetary financial intermediaries, the structure and regulation of capital markets, and the functions of market yields as the price mechanism that allocates saving to various categories of economic investments.

**FI 619 Monetary and Central Banking Policy**

Prerequisites: EC 603-604, QA 604. The impact of monetary change upon employment, output and prices; the formulation and execution of Federal Reserve policy designed to regulate money, credit and interest rates.

**FI 645 Corporate Financial Theory**

Prerequisites: FI 615, FI 651. An analysis of the theoretical structure supporting optimum financial decision making by the business firm. Emphasis is placed upon the determination of the combination of investment, financing and dividend decisions that maximizes the valuation of the firm within a security market context.

**FI 649 Security Analysis**
Prerequisite: FI 651. An analysis of the determinants of valuation for fixed income securities, common stocks, convertible securities and common stock warrants. Emphasis is placed upon the information and techniques relevant to security valuation and selection and the structure and workings of the securities markets.

**FI 651 Portfolio Management and Capital Market Analysis**
Prerequisites: EC 603-604, QA 604, A 600 (or equivalent). Considers the theoretical structure for the procedures (security analysis, portfolio analysis and portfolio selection) which constitute the process of portfolio management, as well as their limitations in practice. Additional attention is placed upon the logical implications of portfolio analysis for capital market theory.

**FI 655 Commodity Market Analysis**
Prerequisites: EC 603-604, QA 604. A conceptual and operational examination of the markets in which commodities are traded, the participants and major exchanges including an analysis of the major commodities traded and the factors influencing their prices.

**FI 661 Real Estate: Principles and Practices**
Prerequisites: EC 603-604, QA 604. Real estate from the investor's point of view. Impact of taxation on real estate investments. Emphasis on commercial land use through the use of case studies and problems.

**FI 670 Selected Topics**
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**FI 690 Research Project**
Prerequisite: 15 graduate hours or permission of the instructor. Independent study under the supervision of an adviser.

**FI 695 Independent Study I**
A planned program of individual study under the supervision of a member of the faculty.

**FI 696 Independent Study II**
Prerequisite: FI 696.

**FI 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**FI 699 Thesis II**
Prerequisite: FI 698. A continuation of FI 698, Thesis I.

# Department of Hotel Management, Tourism and Travel

**HM 610 Content Seminar in Hospitality/Institutional/Tourism Administration**

Detailed analysis of recent developments in tourism and mass food service administration.

**HM 625 Supervisory and Leadership Analysis in Tourism, Hospitality and Institutional Operations**

An incident approach is used to provide a cross section of supervisory situations that have faced hospitality management. Emphasis is given to particular situations involving leadership developments, ethical behavior and social responsibility.

**HM 630 Personnel and Labor Relations in the Hospitality/Tourism/Institutional Fields**

Topics include organizational behavior, personnel selection, placement, supervision, job evaluation, wage and salary administration, motivation morale and union-management relations. Case studies and role playing are integral parts of the course.

**HM 640 Haute Cuisine for Hospitality Executives**

An advanced course which covers the study and preparation of classical food items and service of the major world cuisines, culminated with the serving of a formal banquet. Laboratory fee required.

**HM 655 Development of Hotel/Restaurant/Institutional Food Services**

Examines the processes for developing profitable hotel, restaurant and institutional services. Some of the characteristics, opportunities, risks and decisions involved in starting hospitality and travel enterprises and institutional food services are studied.

**HM 660 Comparative Tourism**

Prerequisite: permission of department chairman. A detailed study of tourism developments in Connecticut compared with similar developments in a foreign state. Arrangements will be made for an on-site visit to a foreign country to facilitate the comparative study.

**HM 690 Research in Tourism/Hospitality/Institutional Administration**

Prerequisite: permission of department chairman. Independent study under the supervision of an adviser.

**HM 698 Thesis I**

Prerequisite: 15 graduate hours, permission of the department chairman. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**HM 699 Thesis II**

Prerequisite: HM 698, permission of the department chairman. A continuation of HM 698, Thesis I.

# Department of Humanities

COLLOQUIA:

**HU 601-602 Themes in Western Thought and Culture: Greece, Rome**
Readings in primary sources of some of the classics in Western thought from Homer to the Renaissance. The place of these selected works in the development of Western ideas.

**HU 606 Humanism and Its Methodology**
A classic idea, work of art, musical composition, work of literature, historical event, and the variety of the critical appraisals of it.

**HU 611 Historical Views and Views of History**
A survey of modern Western Historiography with particular attention to the methodology of recent and contemporary historians.

**HU 616 Art and Thought of the Renaissance**
A study of the achievements of some of the major figures of the Renaissance in art, music, philosophy, natural science, literature, drama.

**HU 621 The Age of the Enlightenment**
Philosophical background of the Age of Reason and its effects upon the art, music, and literature of the period.

**HU 626 The Age of Darwin**
Scientific thought of the period and its effect upon religious and philosophical ideas, upon art and literature, and upon the development of sociological thought.

**HU 631 Culture and Ethics in the Modern Age**
Popular attitudes and rational concepts that determine the structure of contemporary America.

**HU 636 Philosophical Thought**
An examination of the changes in meaning and use of such enduring themes as certainty, existence, God, justice, knowledge, law, right, good.

**HU 638 Structuralism and Structural Linguistics**
An introduction to the basic principles of structuralism, with special emphasis given to elements of language and linguistic theory.

**HU 641 Technology and Human Values**
The influence of applied science and technology on our conceptions of ourselves, our society and our environment.

**HU 646 The Social Sciences in Our Time**
How the social sciences are related to the humanities, estimates of the human condition in the light of developments in sociology, history, political science, psychology and economics.

SEMINARS

**HU 651-689 Seminars**

Study of a variety of current subjects and specialized areas of study within the designated field. Students may take more than one seminar in the same general area.

**HU 651-659 Topics in Humanities**

**HU 661-669 Topics in History**

**HU 671-679 Topics in Philosophy**

**HU 681-689 Topics in the Natural, Physical and Social Sciences**

**HU 691-695 Independent Study**

A planned program of individual study or research under the supervision of a member of the faculty.

**HU 698 Thesis I**

Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**HU 699 Thesis II**

Prerequisite: HU 698. A continuation of HU 698, Thesis I.

## Courses in International Business Department of Marketing

**IB 643 International Business Operations**

Prerequisites: EC 603-604. A summary of the economic, foreign environment and instructional concepts and constraints encountered by international business, and how they apply to decisions by managers of business operations and makers of official policy.

**IB 644 Import and Export Business**

Prerequisites: MK 609, IB 643. A managerial approach to international marketing; emphasis on controllable and uncontrollable variables affecting marketing strategies, evaluation of foreign suppliers, methods of financing imports and exports, and documentation for import and export marketing.

**IB 645 Structure of World Markets**

Prerequisites: MK 609, IB 643. An intensive study of Asia, western and eastern Europe and South America as a complementary trade region for the United States firm. The area is surveyed as a present and potential market as well as an import source. Consideration is given to the historical and racial background of the people; their political, social and educational development; the resources and economic development of the countries in the area; and business practices unique to the area and its countries.

**IB 651 Comparative Marketing**
Prerequisites: MK 609, IB 643. A systematic study of the national and regional basis of socioeconomic conditions and of distributive business activities. The analysis of international similarities and differences in marketing functions, structures, processes, and factors as related to the physical, economic, political, social and cultural environments. The dynamic changes under way in marketing systems are also considered.

**IB 652 Multinational Business Operations**
Prerequisites: MK 609, IB 643. Managerial problems and strategies in foreign operations; structuring international operations through acquisition, licensing, or joint venture; the assessment of local competition; the impact of foreign environments; and legal, political and cultural problems facing the multinational firm in its relationship with its host countries.

**IB 670 Selected Issues**
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**IB 690 Research Project**
Prerequisite: 15 graduate hours and permission of the instructor. Independent study under the supervision of an adviser.

**IB 695 Independent Study I**
A planned program of individual study under the supervision of a member of the faculty.

**IB 696 Independent Study II**
Prerequisite: IB 695.

**IB 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**IB 699 Thesis II**
Prerequisite: IB 698. A continuation of IB 698, Thesis I.

## Department of Industrial Engineering

**IE 601 Introduction to Operations Research/Management Science**
Prerequisites: M 610, IE 607 or QA 604 or equivalent. Introduction to the techniques and philosophies of management science and operations research. Topics include linear programming, inventory analysis, queuing theory, dynamic programming, decision analysis and other management techniques.

**IE 602 Quality Analysis**
Prerequisite: IE 607. Concepts of quality control and statistical quality analysis. Sampling techniques and decision processes.

**IE 603C Introduction to Digital Computers: COBOL**

An introduction to the basic elements of computer science including computer hardware, software, information and data processing. Programming concepts are introduced using COBOL, a common business-oriented language. A student who has taken IE 603F will not be given credit for IE 603C.

Laboratory fee required

**IE 603F Introduction to Digital Computers: FORTRAN**

An introduction to the basic elements of computer science including computer hardware, software, information and data processing. Programming concepts are introduced using FORTRAN, a common language that is well-suited for scientific and technical work. A student who has taken IE 603C will not be given credit for IE 603F.

Laboratory fee required

**IE 604 Management Systems**

Techniques of industrial and governmental systems management including general systems and organizational theory.

**IE 605 Advanced Business Programming**

Prerequisites: IE 603C or proficiency in language similar to COBOL. Advanced programming in COBOL or other business-oriented language within an applied business systems context. Laboratory fee required

**IE 606 Advanced Technical Programming**

Prerequisites: IE 603F or proficiency in a language similar to FORTRAN. Advanced programming in FORTRAN or other technically-oriented language with emphasis on scientific and technical applications.

Laboratory fee required

**IE 607 Probability Theory**

Prerequisite: M 610 or equivalent. Probability of events. Random variables and expectations; discrete and continuous distributions; important standard distributions and applications; moment generating functions; central limit theorem.

**IE 608 Assembler Language**

Description of the general functional characteristics of a computer's main storage and peripheral units. Interrupt philosophy and interrupt service routines. Discussion of the general philosophy of assembler instructions, code conversion of I/O to and from main memory and familiarization with appropriate reference manuals. Micro instructions will be introduced to allow for writing and running of assembler programs. Macro instructions will be developed to demonstrate techniques for reduced programming time.

Laboratory fee required

**IE 610 Computer Systems Selection**

Prerequisites: IE 605 or IE 606, IE 614. Techniques for selecting, installing, and operating computer systems and their peripheral equipment. Concepts of decisions with respect to compiler and hardware selection. Development of operating procedures, form design, systems charting and documentation.

**IE 611 Budgeting and Control**

Prerequisite: A 600. An analytic approach as applied to the principles and policies of operational budgeting and control of expense and capital investments. Includes forecasting techniques, development of totally integrated systems with traditional financial statements and controls from top management to first-line supervision.

**IE 612 Managerial Interactions I**

An interdisciplinary systems approach to human behavior in organizations with emphasis on the impact of industrial engineering methods on organizational performance. The first course will deal with individual motivation and face-to-face interaction in managerial roles; the second concentrates on organizational development, job enrichment, and modern work attitudes.

**IE 613 Managerial Interactions II**

Prerequisite: IE 612.

**IE 614 Data Information Systems**

Prerequisites: IE 603 or equivalent, IE 604. Introduction to automated information systems planning and operations and their impact on management decision making, control functions and communication capabilities. An overview of concepts and procedures with applications in urban environments, large organizations and governmental agencies. Techniques presented include PERT/CPM, Gantt charting, cost-benefit analysis.

**IE 615 Transportation and Distribution**

Prerequisite: IE 601. Introduction to transportation science with emphasis on physical distribution problems. Survey of operations research models and optimization strategies and their roles in transportation systems management.

**IE 619 Enterprise Design and Evaluation**

Prerequisite: IE 601. An analysis of the principles and methods used in estimating the probable economic characteristics of proposed enterprises. The student is required to formulate a proposed enterprise, including the technical, financial and organizational requirements.

**IE 621 Linear Programming**

Prerequisites: M 610 or equivalent, IE 601 or equivalent. Thorough coverage of the techniques and applications of linear programming, a powerful operations research tool for optimal allocation of limited resources in linear systems.

**IE 622 Queuing Theory**

Prerequisites: IE 601, IE 607. Elements of queuing theory including finite and infinite cases. Single server and multiple server parallel channels, series queues and special cases are analyzed. Experimental methods, including simulation, are presented in the context of industrial environments.

**IE 623 Decision Analysis**

Prerequisite: QA 605 or IE 607. Decision theory, game theory, and stochastic decision processes. Benefit-cost analyses under uncertainty.

**IE 631 Production Engineering**
Prerequisites: IE 601, IE 602. An analysis and practical application of engineering activity that results in the transformation of natural resources into a finished product.

**IE 641 Quality Control Economics**
Prerequisites: IE 602, IE 607 or QA 604. An economic managerial analysis of statistical quality control sampling and control chart systems with application to accepted and hybrid systems.

**IE 643 Reliability and Maintainability**
Prerequisites: IE 602, IE 607 or QA 604. The basic theory and methodology of reliability and maintainability, including application of discrete and continuous distributions and statistical designs. Reliability, estimation, structure models and growth models.

**IE 651 Human Engineering I**
A broad coverage of the physiological, psychological, and sociological aspects of man and the society in which he lives and works. Special topics include human factors, motivation, group dynamics and ekistics.

**IE 652 Human Engineering II**
Prerequisite: IE 651.

**IE 655 Value Engineering**
Consideration of value analysis from the point of view of design, manufacturability, procurement, installation and maintainability in order to optimize value in products.

**IE 670 Current Topics in Computer and Information Science**
Prerequisites: IE 601, IE 603, or permission of the instructor. An examination of new developments or current practices in computer and information science. A topic will be selected for thorough study; possible subject areas include data structures, recent hardware or software advances, specialized applications. Content may vary from semester to semester

**IE 671 Current Topics in Operations Research**
Prerequisites: IE 601, IE 607, IE 621 or permission of the instructor. An examination of new developments or current practices in operations research. A topic will be selected for thorough study; possible subject areas include non-linear programming, network theory, scheduling techniques, specialized applications. Content may vary from semester to semester.

**IE 672 Current Topics in Industrial Engineering**
Prerequisite: IE 601 or permission of the instructor. An examination of new developments or current practices in industrial engineering. A topic will be selected for thorough study—possible subject areas include reliability, production engineering, human factors, specialized applications. Content may vary from semester to semester.

**IE 681 System Simulation**
Prerequisites: IE 601 or equivalent, IE 606 or equivalent. A study of the behavior of systems using computer simulation models of their organiza-

tional structure and decision criteria. Laboratory fee required

**IE 682 Compiler Design**

Prerequisite: IE 605 or IE606 or permission of the instructor. Design and operation of assemblers and macroprocessors. Introduction to compiler design. Metalanguage. Lexical and syntactic analysis. Interpretive systems. Control of translation, loading and execution. Relocating loaders and overlay generation. Symbolic coding systems.

**IE 683 Systems Analysis**

Prerequisites: IE 601 or QA 605, IE 614. Techniques and philosophies defining the concept of systems analysis are presented in detail and illustrated with large scale case studies. Diverse systems are analyzed covering the social, urban, industrial and military spheres. Techniques presented include utility theory, decision analysis, and technological forecasting.

**IE 684 Multiprogramming Systems**

Prerequisite: IE 605 or IE 606 or permission of the instructor. Topics in the areas of operating systems and computer architecture. Multiprogramming and multiprocessor systems. Dynamic storage allocation and virtual memory systems. Time-sharing systems. On-line, real-time systems.

**IE 685 Theory of Optimization**

Prerequisites: calculus, IE 603F or equivalent. Nonlinear and dynamic programming with special reference to computer analysis of optimization problems.

**IE 686 Inventory Analysis**

Prerequisites: IE 601, IE 607 or QA 605. Inventory theory and practical applications in operating inventory systems. Model construction, optimization and computer simulation.

**IE 688 Design of Experiments**

Prerequisite: IE 689 or three credit hours of statistical inference. Principles of modern statistical experimentation and practice in use of basic designs for scientific and industrial experiments; single factor experiments, randomized blocks, latin squares; factorial and fractional factorial experiments; surface fitting designs.

**IE 689 Descriptive and Inferential Statistics**

Prerequisite: IE 607 or equivalent. Inferential statistical designs, including basic statistical tests and analysis of variance. Statistical theories and application of correlation analysis, multiple linear regression, nonlinear regression, and analysis of covariance.

**IE 690 Seminar Project**

Prerequisites: 15 credit hours and permission of the program coordinator. Independent study under the guidance of an adviser into an area of mutual interest, such study terminating in a technical report of academic merit. Research may constitute a survey of a technical area in industrial engineering, operations research or computer science, or may involve the solution of an actual or hypothetical technical problem.

**IE 695 Independent Study**
Prerequisite: permission of the program coordinator. Independent study under the guidance of an adviser into an area designated by the program coordinator.

**IE 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussion of the individual student's progress in the preparation of a thesis.

**IE 699 Thesis II**
Prerequisite: IE 698. A continuation of IE 698, Thesis I.

## Courses in Business Law Department of Accounting

**LA 673 Business Law I: Contracts and Sales**
Survey of the legal aspects of contracts and the results of contractual obligations. Legal problems stemming from the distribution of goods; generally the rights and duties of buyers and sellers and the remedies available to them.

**LA 674 Business Law II: Business Organizations and Negotiable Instruments**
Basic introduction to problems of formation and operation of legal groups and general legal survey of the role of agency, partnerships and corporations and other complex entities in modern society.

## Department of Mathematics

**M 610 Fundamentals of Calculus and Linear Algebra**
Prerequisite: M 115 or equivalent. Review of algebra. Topics from calculus, including differentiation and integration methods, applied to problems in science, business, and the social sciences. Linear algebra, systems of linear equations and matrix methods.

**M 620 Numerical Analysis**
Prerequisite: 9 credit hours of calculus and programming ability in FORTRAN. Algorithms for obtaining numerical solutions on computers. Topics include: solution of nonlinear equations by iterative methods, matrix inversion, evaluation of determinants, solution of systems of linear equations by direct and iterative methods, numerical integration, differentiation and solution of differential equations by finite difference methods.
Laboratory fee required.

**M 624 Applied Mathematics**
Topics in applied mathematics including ordinary and partial differential equations, linear analysis and boundary value problems.

## Department of Mechanical Engineering

**ME 602 Boundary Value Problems**
Solution techniques involving boundary values to physical systems. Special functions, orthogonality, eigenvalue problems.

**ME 603 Approximation Methods**
Prerequisite: ME 602. Techniques for realizing engineering solutions to complex systems. Asymptotic expansions and perturbation methods among topics.

**ME 604 Numerical Methods**
Prerequisite: knowledge of FORTRAN. Quantitative techniques adaptable for computer solutions to engineering problems. Curve fitting, transcendental equations, simultaneous equations and numerical integration and differentiation.

**ME 610 Advanced Dynamics**
Kinematics and dynamics of particles and systems of particles. Lagrange's equations. Hamilton's principles and canonical transformation theory. The inertia tensor and rigid body motion.

**ME 611 System Vibrations**
Advanced techniques for analysis of vibrations in mechanical systems. Multiple degrees of freedom, random noise inputs among topics.

**ME 615 Theory of Elasticity**
Cartesian tensor notation, integral theorems, orthogonal curvilinear coordinates. Stress tensor, dynamical conservation equations, isotropy and anisotropy. Boussinesq-Popkovitch potentials. Wave equations.

**ME 620 Classical Thermodynamics**
Phenomenological equilibrium and nonequilibrium thermodynamics. Formulation and application of fundamental laws and concepts, chemical thermodynamics.

**ME 622 Statistical Thermodynamics**
Prerequisite: ME 620. Development of methods of statistical thermodynamics within the framework of the molecular theory of matter. Presentation of the role of spectra and intermolecular forces in the interpretation of thermodynamic properties of ideal systems, gases, solids and plasmas.

**ME 625 Mechanics of Continua**
Prerequisite: ME 615 or permission of the instructor. Tensor analysis,

the stress vector and the stress tensor, kinematics of deformation, material derivative, fundamental laws of continuum mechanics, conservation theorems, constitutive laws, and representative applications.

**ME 627 Plasticity**

Study of permanent deformation of metals and non-metals. Topics to include yield surfaces, creep, theories of fracture and time dependent effects.

**ME 628 Modern Materials**

Survey of the forefront of current engineering materials and processing techniques. Representative topics might include composites, superalloys, laser fabrication and continuous casting techniques.

**ME 630 Advanced Fluid Mechanics**

Properties of gases at high temperatures. Gas flows involving ionization and chemical reactions. High-speed and nonsteady flows. Plasma flows.

**ME 632 Advanced Heat Transfer**

Review of the basic concepts of conduction and radiation. Detailed treatment of laminer, turbulent, free and forced convectional flows. Computational projects.

**ME 635 Advanced Turbomachinery**

Prerequisite: ME 630. Design and analysis considerations of modern turbomachinery. Projects requiring computer-aided analysis and design based on recently published information.

**ME 640 Combustion**

Prerequisite: ME 630. Introductory statistical thermodynamics and physical properties of gases, chemical reactions in gases, combustion phenomena, aerodynamics of flames, and detonation phenomena. Design considerations of combustion chambers and burners, and associated instabilities.

**ME 645 Computational Fluid Dynamics and Heat Transfer**

Prerequisite: ME 630; corequisite: ME 604 or M 620. Current methods of computer solutions of the conservation equations of fluid dynamics. Viscous, uncompressible, compressible and shocked flows. Real gas equations of state. Computer projects.

**ME 660 Advanced Design Philosophies**

Open to advanced students. Seminar series on state-of-the-art techniques including objectives and philosophies of design. Guest lectures by recognized industrial experts. Complete design project required of all students.

**ME 670 Special Topics — Mechanical Engineering**

Prerequisite: permission of the instructor. A study of selected topics of particular interest to students and instructor. Course may be taken more than once.

**ME 695 Independent Study I**

Prerequisite: permission of program coordinator. Independent study under the guidance of an adviser into an area designated by the program

coordinator.

**ME 696 Independent Study II**
Prerequisite: ME 695.

**ME 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**ME 699 Thesis II**
Prerequisite: ME 698. A continuation of ME 698, Thesis I.

## Department of Management Science

**MG 625 Systems Techniques in Business Administration**
An integrated study of the techniques for solving administrative problems, including the analysis and improvement of organizational structures, office procedures, forms design, records management, reports and equipment standards. The conduct of a comprehensive systems survey using these techniques is explored in depth as are flow charting and the preparation of manuals.

**MG 633 Managerial Economics**
Prerequisites: EC 603-604, QA 604-605. A study of the application of the major tools of economic analysis to the problems encountered by management in the organization of the firm. Topics include the theory and measurement of consumer demand, measurement and control of costs, the effects of public policy upon managerial decisions and pricing techniques and the allocation of capital within the firm.

**MG 635 Purchasing and Materials Management**
This course deals with the management of materials and the procurement function in a business enterprise. The fundamentals auxiliary functions, and management of materials activities provide introduction to an increasingly specialized field of business administration.

**MG 637 Management**
A study of the functions of management planning, organizing, directing, controlling, coordinating.

**MG 638 Cost Benefit Management**
Prerequisites: QA 604, EC 603. This course will provide students with an introduction and overview to the field of cost/benefit management. Fundamental theoretical evaluation of cost/benefit of a project will be covered. Other topics discussed include: the selection of the best investment criteria, the external environmental spillover effects, and the application of cost/benefit management in decision making under uncertainty.

**MG 640 Management of Health Care Organizations**
Indentification of the characteristics of health care organizations and

the dimensions of management in such organizations. Examination and application of the principles of management necessary for the successful operations of health care organizations.
M.B.A. students in the Health Care concentration take MG 640 in place of MG 637 in the core.

**MG 641 Contract Administration**

Prerequisite: QA 600 or equivalent. The administrative aspects of the contract, modification, evaluation, and sub-contracting. Importance is given to value analysis as it affects the contractor and the government. Other issues are covered such as financial and pattern rights.

**MG 645 Management of Human Resources**

A study of organizational practices in the management of human resources. Manpower planning, recruitment, selection, training, compensation and contemporary problems of the field.

**MG 653 Seminar in Managerial Economics**

Prerequisite: MG 633 or permission of the instructor. Application of managerial economics to selected problems encountered in management of the corporation such as evaluation of costs, returns on alternative investment policies and pricing plans. Problems of implementation covered through analysis of broad range of cases where uncertainty has major bearing on managerial decisions. Application and use of economic tools such as forecasting, capital investment analysis and risk analysis are part of this structure.

**MG 660 Comparative Management**

Prerequisite: MG 637. The main focus of this course is to develop an understanding of managerial practices in different organizations and systems. A conceptual framework is developed for the analysis of interaction between managerial processes and cultural factors as they affect the management of enterprises in various organizations and systems.

**MG 661 Development of Management Thought**

Prerequisite: MG 637. Study of the literature from various disciplines in order to determine the thinking and practices of leaders of organizations, past and present. The historical perspective of management thought will be developed. The contributions of religion, philosophy, economics, sociology and psychology to management thought and practice will be examined. Emphasis on pioneering works in the management of organizations. Case studies of the thinking and practices of famous leaders of American business enterprises.

**MG 662 Organization Theory**

Prerequisite: MG 637. A survey of the literature on theories of organization with emphasis on contemporary theories. Application of the theories to management and organizational problems will be attempted. Difficulties arising between theory and practice will be examined.

**MG 663 Leadership in Organizations**

Prerequisite: MG 637. Examination of theories and research findings from the behavioral sciences that are relevant to leadership in organizations.

The role of the leader within the organization; the prerequisites, knowledge and practices required for successful leadership will be studied. Programs for the development of leaders will be explored.

**MG 664 Organizational Effectiveness**

Prerequisite: MG 637. Identification of the criteria necessary for developing and maintaining effective organizations. A study of the concepts that may be utilized in the management of these criteria. Approaches that may be utilized in developing managers in the use of these concepts will be examined and applied to problem situations through cases and role playing.

**MG 665 Wage and Salary Administration**

Prerequisites: MG 645 and EC 635. A study of the compensation function in organizations. Establishing wages and salaries, fringe benefits and incentives.

**MG 669 Business Policy and Strategy**

Prerequisites: MG 637 and 3 credit hours of 600-level MG course work. Management policies and strategies for the complex organization operating in a dynamic environment are examined from the viewpoint of the top-level executives of the organization. Develops analytical frameworks for the management of numerous elements involved in assuring the fulfillment of the goals of the total organization. Integrates the student's general business knowledge with the required courses in the M.B.A. program. Emphasis is placed on the development of oral and written skills by the examination and discussion of cases.

**MG 670 Selected Topics**

A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**MG 675 Readings in Management**

A seminar. Examines the literature in selected areas of management.

**MG 678 Personnel Management Seminar**

Prerequisites: MG 637, MG 645, P 619 & EC 625. A seminar in the personnel and manpower management function of the modern work organization. The use of an integrated behavioral, quantitative, and systems approach permits an applied multidisciplinary synthesis of the various aggregate manpower management subsystems required in the modern work organization.

**MG 679 Industrial Relations Seminar**

Prerequisites: MG 637, P 619, EC 625 & EC 687. A seminar in industrial relations and the labor-management relations function of the modern work organization. The use of an integrated behavioral, economic, and legal approach permits an applied multidisciplinary synthesis of the employee relations function required in either nonunionized or unionized work organizations.

**MG 680 Current Topics in Business Administration**

Prerequisite: 15 graduate hours or permission of the instructor. An integrative course that will examine the role of business in society and relate the business firm to its social, political, legal and economic environment. While the exact content of this seminar is expected to vary from semester to semester

in accordance with the varied academic interests and professional backgrounds of different faculty handling the course, the basic theme is the role of the business firm as the "keeper" of the market mechanism and the means for organizing resources in the economy.

**MG 685 Research Methods in Business Administration**
Designed to familiarize administrators with the tools and potentialities of social research and to assist them in the presentation, interpretation and application of research data.

**MG 690 Research Project**
Prerequisite: 15 graduate hours or permission of the instructor. Independent study under the supervision of an adviser.

**MG 695 Independent Study I**
A planned program of individual study under the supervision of a member of the faculty.

**MG 696 Independent Study II**
Prerequisite: MG 695.

**MG 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**MG 699 Thesis II**
Prerequisite: MG 698. A continuation of MG 698, Thesis I.

## Department of Marketing

**MK 609 Marketing**
Prerequisites: EC 603-604. An intensive study of modern marketing fundamentals, a study of the decision-making problems encountered by the marketing executive and the relation of marketing to environmental forces.

**MK 616 Analysis of Buyer Behavior**
Prerequisite: MK 609. An examination of the principal comprehensive household and organizational buyer behavior models and the behavioral science theories upon which such applied models are based. The buyer is analyzed at the individual level, at the social level and at the organizational level.

**MK 639 Marketing Research and Information Systems**
Prerequisites: MK 609, QA 605. A managerial approach to marketing information flow, including recognition of information needs and an overview of marketing research as part of an information system. Special attention to evaluation of research design and measurement methods, effective utilization of research output, and problems encountered in establishing a marketing information system.

**MK 641 Marketing Management**

Prerequisite: MK 609. The treatment of the basic decision problems of marketing management in terms of a conceptual framework for analysis. Consideration of the role played by human judgments and the mathematical tools available to aid in these judgments in a number of marketing areas, notably market analysis, pricing decisions, advertising decisions, promotional decisions and selection of distribution channels.

**MK 643 Product Management**

Prerequisite: MK 609. The search for new product ideas and their evaluation; the organization structure necessary to the development and introduction of new products and the management of a product line; the commercial aspects of product design, packaging, labeling and branding; considerations involved in making product deletion decisions; and the social and economic effects of managing product innovation.

**MK 644 Consumerism**

Prerequisite: MK 609. An analysis of the evolution of the consumerist movement; how and why it has developed; government agencies dealing with consumer problems; the impact of various market structures on the consumer; the impact of consumer-oriented legislation on marketing strategies; and the responsibility of business to the consumer and to society.

**MK 645 Distribution Strategy**

Prerequisite: MK 609. Analysis of channel strategies; theory and economic justification of distribution channels; direct and indirect methods of control; behavioral states of channel members; costing the channel; and management of changes in distribution.

**MK 670 Selected Topics**

A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**MK 680 Marketing Workshop**

This course is centered around a structural model of a business firm. The major objective is to provide the student with an opportunity to develop managerial insights and skills in dealing with marketing problems in a competitive environment. Each of the participants is grouped into decision-making units (companies) and assumes the role of a marketing executive operating a business firm. These executives will be responsible for planning, organizing, staffing, directing and controlling their firm's resources.

**MK 690 Research Project**

Prerequisite: 15 graduate hours and permission of the instructor. Independent study under the supervision of an adviser.

**MK 692 Readings in Marketing**

**MK 695 Independent Study I**

A planned program of individual study under the supervision of a member of the faculty.

**MK 696 Independent Study II**
Prerequisite: MK 695.

**MK 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**MK 699 Thesis II**
Prerequisite: MK 698. A continuation of MK 698, Thesis I.

## Department of Psychology

**P 605 Survey of Community Psychology**
An examination of historical roots and current concepts. A social-problems approach to psychological dysfunction. Changing professional roles. Community organization and human service delivery; strategies of intervention and community change.

**P 607 Special Problems in Community Psychology**
Theory and practice of community psychology with selected problems, populations and settings. Emphasis on community psychology service issues and problems in the Connecticut area.

**P 609 Research Methods**
Introduction to analytic concepts pertinent to sampling techniques, research design, variable control and criterion definition. Basic problems of measurement, research paradigms, sources of error in research interpretation, problems of variable identification and control, and consideration of the logic of inference.

**P 610 Program Evaluation in Community Psychology**
Prerequisite: P 609. A systematic study of the processes involved in planning, implementing and evaluating social service programs. The focus is on action research strategies which integrate the entire process from planning and grant application to the evaluation of the program.

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**Field Experience and Practicum Seminars**

An apprenticeship or on-the-job role in an ongoing program or center. Emphasis on developing conceptualizations and insights as a result of involvement in the apprenticeship. Placement at a field site for 8 to 10 hours per week. Weekly class meetings serve two purposes: to present specific theoretical material and research findings appropriate to each seminar, and to allow students to discuss their field training experiences.

**P 611 Field Experience & Practicum Seminar I: The Dyadic Relationship**
Content focuses upon one-to-one relationships in community psychology. See general description above.

**P 612 Field Experience & Practicum Seminar II: Models of Consultation**
Content focuses upon community consultation. See general description above.

**P 613 Field Experience & Practicum Seminar III: Systems Intervention**
Content focuses upon intervention into and change in community systems. See general description above.

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**P 618 Community Mental Health Philosophy and Concepts**
Considerations of the philosophical bases which underlie traditional approaches to mental health. A study of the implied cultural values and attitudes which have determined the locations, the settings, the methods and the objectives of mental health treatment concepts, programs and techniques.

**P 619 Organizational Behavior**
Analysis of various theories of business and managerial behavior emphasizing the business organization and its internal processes. Psychological factors in business and industry, including motivation, incentives and conflict. A study of research findings relevant to an understanding and prediction of human behavior in organization.

**P 620 Industrial Psychology**
Psychological theories and research applied to business and other organizations. Problems and methods in selection and placement, training, performance appraisal, motivation and leadership.

**P 621 Behavior Modification**
Theory and research in behavior modification. Aversive learning, desensitization, operant conditioning. Applications in clinical and nonclinical settings.

**P 623 Psychology of the Small Group**
Analyses of the behavior and interaction of people in mutual gratification groups, committees, work groups and clubs.

**P 625 Advanced Psychology of Human Development**
In-depth exploration of development through the life cycle and the developmental impact of family, neighborhood, schools, work, class, race, sex, etc.; key theoretical concepts; research findings; community intervention.

**P 627 Attitude and Opinion Measurement**
Prerequisite: P 609. Examination of modern methods of attitude and opinion measurement. Scale, schedule, and interview formats. Respondent sets. Consideration of sampling problems.

**P 628 The Interview**
The interview as a tool for information gathering, diagnoses, mutual decision making and behavior change. Use of role playing provides the student with insights into nuances of interpersonal relationships. Applications to selection, counseling and other situations.

**P 629 Introduction to Counseling**
The roles of the client and the counselor in the counseling relation.

Examination of underlying assumptions.

**P 630 Psychology of Personality**
Major personality theories and their implications. Examination of the psychological and organic factors involved in personality development and expression.

**P 631 Social Psychology**
Current problems in social psychology. Attitude scale construction, attitude change, language as a social phenomenon, patterns of culture, social class, groups, person perception and conformity.

**P 632 Group Dynamics and Group Treatment**
An exploration of the emerging area of group dynamics. The structure of groups, their development, process interaction analysis, formal and informal groups, group psychotherapy and sensitivity training.

**P 633 Problems of Drug Abuse**
Discussion of selected issues and current problems in drug abuse.

**P 634 Personality Assessment**
Prerequisite: P 609. A critical survey of the theories and issues of personality assessment. Topics include intelligence, achievement and ability assessment. Personality tests and ethical questions associated with psychological testing.

**P 635 Assessment of Human Performance with Standardized Tests**
Prerequisite: P 609. Theories, assumptions and constraints underlying construction and application of standardized tests employed in clinical, educational, governmental and industrial settings. Emphasis on selection of appropriate standardized tests for specific applications.

**P 636 Abnormal Psychology**
Etiological factors in psychopathology dynamics and classification of neuroses, psychophysiologic conditions, psychoses, personality disorders, organic illness, retardation and childhood diseases.

**P 638 Psychology of Communication and Opinion Change**
Characteristics of the source, the situation, and content of messages, along with other variables influencing attitudinal modification. Cognitive factors and social settings in attitude change.

**P 640 Industrial Motivation and Morale**
Prerequisite: P 619. The meaning of work; theories of motivation. Stimulus deprivation and expectation of reinforcement; job satisfaction and motivation; pay as an incentive; interventions to increase work motivation. Case studies.

**P 642 Organizational Change and Development**
Prerequisite: P 619. The nature of organization development, intervention by third-party consultation, change in organization structure and role relationships, managerial grid, participation, conformity and deviation.

**P 645 Seminar in Organizational/Industrial Psychology**
Prerequisite: P 619 and P 609. An examination of the relationship between molar human behavior and the sociophysical settings in which it occurs. Human behaviors are conceptualized as adaptive responses to environmental systems that provide their contexts. Particular emphasis will be placed on the ecological match between human service organizations and their clients. Class seminars will alternate with on-site study of human service agencies.

**P 650 Ecological Psychology**
An in-depth study of the relationship between molar human behavior and the sociophysical settings in which it occurs. Human behaviors are conceptualized as adaptive responses to environmental systems that provide their contexts. Particular emphasis will be placed on the ecological match between human service organizations and their clients. Class seminars will alternate with on-site study of human service agencies.

**P 660 Contemporary Issues in Organizational/Industrial Psychology**
Prerequisite: 12 hours in psychology or consent of the instructor. In-depth investigation of topical areas of concern in organizational/industrial psychology. Topics may include, but are not limited to, the impact of EEOC regulations on selection and promotion; assessment centers; the role of the consultant in organizations; flex-time, day care, and other strategies to accommodate family needs of employees; stress in work settings; women in management. Content will be stated at the time the course is scheduled. Students may petition for a particular topic they feel would fit their academic goals. May be taken twice.

**P 670 Selected Topics**
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**P 672 Psychology of the Middle and Later Years**
A comprehensive consideration of the psychological aspects of the aging process. Sensation, perception, cognition, intelligence, problem solving, memory and sexuality, personality changes. Disengagement, rigidity. Death and its anticipation.

**P 678 Practicum I**
For students already employed in a managerial or supervisory role. A job-related research project is carried out under faculty supervision.

**P 679 Practicum II**
Prerequisite: P 678.

**P 693 Organizational Internship I**
For students without experience at the managerial or supervisory level. Under faculty supervision, the student engages in field experience in an industrial setting.

**P 694 Organizational Internship II**
Prerequisite: P 693.

P 695 Individual Intensive Study I
Prerequisite: completion of required courses or 24 graduate hours and written approval of department chairman. Provides the graduate student with the opportunity to delve more deeply into a particular area of study under faculty supervision.

P 696 Individual Intensive Study II
Prerequisite: P 695.

P 698 Thesis I
Prerequisite: completion of all required courses or 24 graduate hours and written approval of departmental chairman. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

P 699 Thesis II
Prerequisites: P 698, written approval of departmental chairman. A continuation of P 698, Thesis I.

## Department of Public Administration

PA 601 Principles of Public Administration
The development, organization, functions and problems of national, state and local governmental administration.

PA 602 Public Policy Formulation and Implementation
Recommended prerequisites: PA 601, EC 608, PA 604, PA 611. The relationship between public administration and the formulation of public policy is studied. The implementation of public policy by administrators based on the politics of the administrator is examined in terms of interaction between various group representatives, i.e., the legislators, the politician, and pressure group leaders.

PA 604 Seminar in Communities and Social Change
Interactions among the community as a social organization and education, police and welfare institutions within it; special attention to conceptual frameworks and current research or action programs that particularly affect minority groups.

PA 611 Research Methods in Public Administration
Designed to familiarize administrators with the tools and potentialities of social research, and to assist them in the presentation, interpretation and application of research data.

PA 620 Personnel Administration and Collective Bargaining in the Public Sector
Recommended prerequisites: PA 601, EC 608, PA 604, PA 611. Study of the civil service systems in the United States and the state governments, including a systematic review of the methods of recruitment, promotion, disci-

pline, control and removal.

Explores the effects on work relationships of collective bargaining statutes which have been adopted by legislatures. Emphasis is placed on Connecticut's collective bargaining statutes.

**PA 625 Administrative Behavior**

Recommended prerequisites: PA 601, EC 608, PA 604, PA 611. The problems faced by an administrator in dealing with interpersonal relationships and human processes. Analysis of individual and group behavior in various governmental and business settings to determine the administrative action for the promotion of desired work performance. Emphasis given to the public sector. Participation in actual problem situation discussions and case studies.

**PA 630 Governmental Accounting**

Recommended prerequisites: PA 601, EC 608. A comprehensive survey of the essential principles of governmental accounting, budgeting, cost accounting, and financial reporting. The various operating funds, bonded debt, fixed assets, investments, classification of revenue and expenditures, general property taxes and interfund relationships.

**PA 632 Public Finance and Budgeting**

Recommended prerequisites: PA 601, EC 608, PA 604. State and local expenditure patterns, state and local revenue sources, income taxation at the state and local level, excise taxation, sales taxation, taxation of capital and the property tax. Emphasis on fiscal and economic aspects of federalism and federal-state fiscal coordination. The role of the budget in the determination of policy, in administrative integration, in control of government operations.

**PA 634 Problems of Municipal Management**

Recommended prerequisites: PA 601, EC 608, PA 604. Study of selected problems of city management with emphasis on "housekeeping" and line operations.

**PA 635 Statistics for Public Administrators**

Provides a basic theoretical treatment of the nature of statistical analysis and its role in economic research design and procedure.

**PA 639 Seminar in Public Sector Procurement**

General policy and regulatory aspects; contracting; organizing for procurement and materials management; managing and controlling the procurement process; and innovations in public procurement.

**PA 640 Purchasing**

Current innovative techniques used in purchasing. Emphasis on warehousing, storage, inventory control and cooperative purchasing plans.

**PA 641 Institutional Budgeting**

Recommended prerequisites: PA 601, EC 608. Budgeting as an institutional planning tool, as a cost control device and as a program analysis mechanism. Attention is given to the salary expense budget, the revenue budget, the capital budget and the cash budget.

**PA 642 Health Care Delivery Systems**

This course deals with a comparative analysis of health care delivery systems and the application of systems analysis and design concepts for designing and evaluating health care delivery systems.

**PA 643 Health and Institutional Planning**

Designed to develop skills and understanding of the dynamics of health and social planning processes with respect to consumer demand, national and local health goals and the optional location of facilities, services and manpower.

**PA 644 Administration of Programs and Services for the Aged**

The structure, function and properties of publicly and privately funded programs and service organizations providing health services to the aged. The economic, political, legal and social issues which affect the administration of human service organizations will be studied, with emphasis on administration of health care services.

**PA 645 Health Care Economics and Finance**

Recommended prerequisite: PA 641. This course integrates the accounting, economics, finance, budgeting, and health insurance principles, concepts and analytical tools which are essential to the decision-making processes of health care organizations.

**PA 647 Zoning and Land Subdivision Regulation**

Recommended prerequisite: PA 660. Ordinance structure and planning theory as expressed in texts of ordinances. Selected court cases.

**PA 650 Administrative Law**

A search for principles and criteria against which public interest can be balanced with private right in the changing patterns of government, with particular reference to the American system.

**PA 660 Urban Planning: Theory and Practice**

Recommended prerequisites: PA 601, EC 608, PA 604, PA 611. Explores the concept of physical planning within the urban developmental framework. The function of planning in its relationship to the environment. Comprehensive planning with its many ramifications involving the various sections of our society. Methods for analyzing problems as well as design methods for problem solving.

**PA 661 Problems of Metropolitan Areas**

Analysis of the problems of government and administration arising from the population patterns and physical and social structures of contemporary metropolitan communities.

**PA 662 Environmental Design**

A nontechnical introduction to the physical sciences of ecology and the principle areas of pollution. Industry problems of pollution control and effects of recent legislation will be explored to show how decisions of society affect our environment.

**PA 663 Urban Housing**

Encompassed are the subjects of housing management, planning, finance and policy. Specific topics such as the provision of low-income housing, the use of mortgage insurance, interest subsidies, site planning, rent controls, code enforcement, mortgage markets, and the rise of housing abandonment are stressed.

**PA 670 Selected Topics**

A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**PA 671 Administrative Problems**

Exploration of the practical experiences and problem-solving situations in the day-to-day activities of a public administrator.

**PA 680 Seminar in Public Administration**

Recommended prerequisites: PA 601, EC 608, PA 604, PA 611. Exact material to be covered will be announced.

**PA 690 Research Project I**

Prerequisites: 15 graduate hours, permission of the public administration graduate program coordinator. Independent study for advanced graduate students on selected problems in public administration.

**PA 691 Research Project II**

Prerequisites: 15 graduate hours, permission of the public administration graduate program coordinator. Independent study for advanced graduate students on selected problems in public administration.

**PA 692 Readings in Public Administration**

Prerequisite: 15 graduate hours or permission of the instructor.

**PA 693 Public Administration Internship**

Prerequisites: 15 graduate hours, permission of the public administration graduate program coordinator. A supervised work experience in a cooperating public service agency. Students must be available for at least one day per week.

**PA 695 Independent Study I**

A planned program of individual study under the supervision of a member of the faculty.

**PA 696 Independent Study II**

Prerequisite: PA 695, Independent Study I.

**PA 698 Thesis I**

Prerequisite: 15 graduate hours. Periodic meetings and discussion of the individual student's progress in the preparation of a thesis.

**PA 699 Thesis II**

Prerequisite: PA 698, Thesis I.

## Department of Physics

PH 680 Special Topics – Physics

Prerequisite: permission of the instructor. A study of selected topics of particular interest to students and instructor. Course may be taken more than once.

## Department of Political Science

PS 601 Constitutional Law

A study of the relation of the judicial process and constitutional law to the political process in the United States. Judicial review, federalism and separation and delegation of powers.

PS 602 Civil Liberties and Rights

An analysis of civil liberties, civil rights, due process, and equal protection of the law. An examination of the role of the public official in the protection, denial or abridgement of the constitutional and legal rights of individuals.

PS 603 International Law

A study of the role of international law in the modern state system with particular reference to individuals; territorial jurisdiction; law of the sea, air and space; and the development of law through international organizations.

PS 605 Criminal Law

Scope, purpose, definition and classification of criminal law. Offense against the person; habitation and occupancy. Offenses against property and other offenses. Special defenses. Emphasis on the Connecticut penal code.

PS 608 The Legislative Process

An analysis of the legislative process in the American political system. Stress will be placed on legislative politics in state and local government. Among areas covered will be legislative functions, selection and recruitment of legislative candidates, legislative role orientations, the legislative socialization process, the committee system, the legislators and their constituencies, legislative lobbyists, legislative decision making, legislative-executive relations and legislative organization and procedures.

PS 616 Urban Government and Politics

An examination of the urban political system. Stress will be placed on the political aspects of urban government structures. Among the areas covered will be formal and informal decision making in urban government, community power structures, types of urban government structures, the politics of intergovernmental relations and the politics of servicing the urban environment (social services, planning agencies, education, housing, transportation, health, pollution control and ecology, revenue sharing, public safety, neighborhood corporations, etc.).

**PS 626 Decision Making in the Political Process**

An in-depth study of decision making in the American system with special emphasis upon the various types of mechanisms, i.e., executive, legislative, judicial, bureaucratic, organizational and military. The influence of intelligence, economic and psychological factors and social pressures upon decisions and decision makers will be examined.

**PS 628 Change and Government**

A study of the major processes of change and their consequences for the functioning of government. The course will concentrate upon changes that may occur through violence, evolution or technology, and which may alter the effective operation of government.

**PS 633 The Political Process and the Aged**

A study of the political process as it relates to the aged. Governmental decision making on federal, state and local levels including legislation and its implications.

**PS 635 Law and Public Health**

A course for the civil servant or health professional concerned with the laws relating to the public health at the federal, state and local level as well as the practical administration of those laws.

**PS 641 The Politics of Interdependence**

An examination of the global politico-economic system and the challenges facing world diplomacy. Multinational corporations and political structures designed to coordinate global policies for the monetary and trade systems, international organizations and their impact on third world development, and problems facing industrialized nations will be analyzed.

**PS 670 Selected Topics**

A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**PS 695 Independent Study I**

A planned program of individual study under the supervision of a member of the faculty.

**PS 696 Independent Study II**

Prerequisite: PS 695.

**PS 698 Thesis I**

Prerequisite: 15 graduate hours. Periodic meetings and discussion of the individual student's progress in the preparation of a thesis.

**PS 699 Thesis II**

Prerequisite: PS 698. A continuation of PS 698, Thesis I.

# Courses in Quantitative Analysis
# Department of Management Science

**QA 600 Quantitative Analysis** No credit

Basic mathematics for solving economic and business problems. Topics include algebra review, equations and inequalities, graphs, exponential and logarithmic functions, an introduction to differential and integral calculus, and matrix algebra.

**QA 604 Probability and Statistics**

Prerequisites: QA 600 or 9 hours of quantitative courses. An introduction to business statistics. Topics include data analysis and presentation, frequency distributions, probability theory, probability distributions, decision making under uncertainty, sampling and statistical inference, hypothesis testing, t, X, and F tests.

**QA 605 Advanced Statistics**

Prerequisite: QA 604 or IE 607. A continuation of QA 604. Topics include simple regression and correlation, multiple regression, analysis of variance, index numbers, time series analysis, seasonal and cyclical variations and an introduction of forecasting techniques.

**QA 606 Advanced Management Science**

Prerequisites: IE 601, QA 604-605. An examination, from a management viewpoint, of the scope of applicability of the methods and models developed in IE 601, Introduction to Operations Research/Management Science, and QA 604-605, Probability and Statistics, and Advanced Statistics. Topics include parametric programming and economic interpretation of the dual LP problem, marginal costs and revenues, shadow prices, opportunity costs, incremental costs, costs of deviation from optimal solution point(s), and location or construction of desirable alternate optimal solutions.

**QA 607 Forecasting**

Prerequisite: QA 605 or permission of the instructor. A survey of some basic techniques and methods used in forecasting at the level of the firm and industry. Topics covered are naive forecasting methods, index numbers, types of economic fluctuations, criteria for fitting estimating lines. Gompertz curve, arithmetic straight line, parabolic trend, logarithmic straight line, seasonal variation, economic indicators, simple correlation and regression, multiple correlation and regression, curvilinear and time series regression.

**QA 670 Selected Topics**

A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**QA 690 Research Project**

Prerequisite: 15 graduate hours or permission of the instructor. Independent study under supervision of an adviser.

**QA 695 Independent Study I**

A planned program of individual study under the supervision of a member of the faculty.

**QA 696 Independent Study II**
Prerequisite: QA 695.

**QA 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**QA 699 Thesis II**
Prerequisite: QA 698. A continuation of QA 698, Thesis I.

## Department of Biology, Environmental Studies and General Science

**SC 601 Ecology for Environmental Engineers**
An introduction to the biological aspects of environmental problems. Includes discussion of the concepts of bioecology, organisms (microorganisms, plants, animals) important in pollution control and detection, and human organ systems most affected by pollution.

**SC 602 Pollutants and the Aquatic Environment**
Prerequisite: SC 601. Discusses the interrelationships among the various kinds of pollutants, the morphology of the lake, river, or coastal area, and the effects on the individual organism and the ecosystem as a whole. Treatment methods using organisms are also discussed.

**SC 603 Air Pollution**
Prerequisite: SC 601. An introduction to air movements in the atmosphere and their relation to pollutants; the effect of air pollution upon organisms with special emphasis on the effects on human beings.

**SC 608 Water Quality**
Prerequisite: SC 601 or undergraduate biology major. Recognition of the organisms and substances of polluted waters; the selection of the appropriate methods for collection, testing, and analysis of the data. The functions and interrelations of governmental agencies in controlling water pollution.

**SC 610 General Environmental Health**
Prerequisite: SC 601 or undergraduate biology major. Principles of public health with general emphasis given to environmental factors such as air and water pollutants, legal standards and preventative measures and their relationships to public health.

**SC 612 Freshwater and Marine Biology**
Prerequisite: SC 601 or undergraduate biology major. Investigation of relationships between aquatic systems and the organisms living in these systems. Emphasis placed on the manner in which ecological studies of aquatic systems are conducted.

**SC 621 Microbiology**
Prerequisites: SC 301, SC 302, or permission of the instructor. An in-depth survey of the groups of microorganisms ranging from the fungi to the viruses. Classification, growth, reproduction, metabolism and major impact on man will be stressed. Current literature pertinent to each group will be utilized.

**SC 622 Bacteriology**
Prerequisites: SC 301, SC 302, or permission of the instructor. Study of the characteristics basic to classification of bacteria. Group-by-group study of bacteria with emphasis on the major detrimental and beneficial contributions of each group as they affect man and the environment. Students will be expected to survey recent findings in scientific publications.

**SC 642 Physical Aging**
Prerequisite: SC 121 or some undergraduate biology. A study of the aging process in man and its effects on the various component systems of the body—muscular, skeletal, endocrine, etc.—in health and disease.

**SC 670 Selected Topics**
Prerequisite: 9 graduate hours. A study of selected issues of particular interest to the students and instructor. May be taken more than once.

**SC 690 Research Project**
Prerequisite: permission of the instructor. Independent study under the supervision of an adviser.

**SC 695 Independent Study I**
A planned program of individual study under the supervision of a member of the faculty.

**SC 696 Independent Study II**
Prerequisite: SC 695.

**SC 698 Thesis I**
Prerequisite: 15 graduate hours. Periodic meetings and discussions of the individual student's progress in the preparation of a thesis.

**SC 699 Thesis II**
Prerequisite: SC 698. A continuation of SC 698, Thesis I.

## Courses in Sociology
## Department of Sociology and Social Welfare

**SO 601 Minority Group Relations**
An interdisciplinary survey of minority groups in the United States with special reference to ethnic, religious and racial factors that influence interaction.

**SO 605 Culture and Personality**

The effect of different cultures upon personality development. Cultural mores and norms as vehicles of control.

**SO 607 Delinquency and Juvenile Crime**

A general introduction to the field of delinquency and crime, including all aspects of the social and personal matrix out of which these forms of social destructiveness arise.

**SO 608 Criminology**

A survey of the available data and theories relating to the scope and nature of the crime problem, characteristics of offenders, and the factors that are correlated with crime. Emphasis on social institutions that play significant roles in the increase or decrease of criminal activity as it exists in the United States and in other cultures. Environmental and personality factors that influence criminal behavior.

**SO 609 Comparative Social Organization**

A comparative analysis of social and political organizations in cultures of varying complexity.

**SO 610 Urban Sociology**

Prerequisite: PA 604. The problem of urban growth and development. Residential patterns together with the physical development of cities and the redevelopment plans. An examination of the people and their relationships to the environment.

**SO 620 Sociology of Bureaucracy**

A study of some of the classic conceptualizations of bureaucracy and their relevance to the structure and functioning of American economic and governmental institutions. The course will be designed to give students inforational and experiental resources with which they, as planners and managers, can improve their abilities to make effective policy decisions. Strongly recommended for gerontology students.

**SO 631 Population Problems and Human Ecology**

A sociological approach to social demography with attention to population growth, patterns of distribution of population and the population changes and trends.

**SO 635 Sociology of Law**

A study of the social origins and consequences of law and legal processes. Emphasis on problems of legal change and the structure and functioning of legal sanctions. Emphasis on law and legal sanctions in other societies, including primitive societies. Major focus on American society.

**SO 641 Death and Suicide**

In-depth analysis of suicide. Traditional theories of suicide are analyzed regarding the psychological approach as well as the demographic and group analysis of sociology. The goal of the course is both academic and practical, stressing community application. Strongly recommended for gerontology students.

SO 651 Social Gerontology
Basic introduction to the field of gerontology. Discusses the history and definition of the field, the contributions of academic disciplines to the field, various perceptions of aging, and explores the basic theories, problems and prospects of gerontology. Required of all gerontology students.

SO 652 Seminar in Gerontology
The seminar will focus on a topic or a series of topics crucial to the analysis of the gerontological phenomenon, and will explore interdisciplinary techniques and findings. Required of all gerontology students.

SO 670 Selected Topics
A study of selected issues of particular interest to the students and instructor. May be taken more than once.

SO 695 Independent Study I
A planned program of individual study under the supervision of a member of the faculty.

SO 696 Independent Study II
Prerequisite: SO 695.

SO 698 Thesis I
Prerequisite: 15 graduate hours. Periodic meetings and discussion of the individual student's progress in the preparation of a thesis.

SO 699 Thesis II
Prerequisite: SO 698. A continuation of SO 698, Thesis I.

## Courses in Social Welfare
## Department of Sociology and Social Welfare

SW 651 Social Work with the Elderly I: Individuals, Families, Groups
This course will deal with the problems of aging, focusing particularly on the individual and the immediate family. Emphasis will be placed on the role of social work in helping the individual and the family to deal with issues of discrimination, medical and psychological problems, parent-child conflicts, death and dying.

SW 652 Human Services and the Elderly II: Programs, Planning, Policies
An introduction to the variety of private and public social service programs available to the elderly. An attempt will be made to identify gaps and propose alternatives for future programming.

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# BOARD, ADMINISTRATION AND FACULTY

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Timothy Mellon, President, Eleven Thirty Inc.
George I. Mordecai, Secretary-Treasurer, Tyler Chapter Pioneers, The Southern New England Telephone Company
Linda Oliwa, Evening Student, University of New Haven
Mrs. William F. Robinson Sr., Title IV Consultant, State Department of Education
Shirlee Schaffer, Writer and Commentator, WELI
Fenmore R. Seton, President, Seton Name Plate Corporation
Edward D. Taddei, GRI, President, The Barrows and Wallace Company, Realtors
Leon J. Talalay
Robert M. Totton, Field Underwriter, New York Life Insurance Company
Philip Turner, Day Student, University of New Haven
P. Takis Veliotis, General Manager, Electric Boat Division, General Dynamics

Doris Werner, Adjunct Professor, University of New Haven
F. Perry Wilson Jr., Senior Vice President, The First Bank
Robert F. Wilson, President, Wallace Silversmiths Inc.
Michael J. Wynne, Assistant Professor, University of New Haven
Felix Zweig, Professor of Engineering and Applied Science, Yale University

## Standing committees

**Executive** Mr. Botwinik, Chairman; Mr. Fischer, Vice Chairman; Mr. Bensen, Dr. Capecelatro, Messrs. Davis, Dodds, Gordon, Kaplan, Pearce, Mrs. Robinson, Messrs. Talalay, Tiernan, P. T. Veliotis, F.P. Wilson, R. Wilson.
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**Nominating** Mr. Pearce, Chairman; Messrs. Frey, Kaplan, Mrs. Robinson.
**Personnel** Mr. Talalay, Chairman; Mr. Taddei, Vice Chairman; Dr. Capecelatro, Messrs. DeMayo, Kaplan, Totton, F.P. Wilson.

## Special committees

**Buildings and Grounds** Mr. Botwinik, Chairman; Mr. Talalay, Vice Chairman; Messrs. Drew, Mordecai, Taddei, Dr. Werner, Mr. Zweig.
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# Standing committees of the university

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**Board of Security Control,** Dr. York, Chairman
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**Tenure and Promotion,** Dr. Staugaard, Chairman

# Administration

## Office of the President

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Walter O. Jewell III, A.B., Ph.D., Executive Assistant
Marvin K. Peterson, B.S. in Econ., L.H.D., President Emeritus
Dalen A. Bowles, Assistant to the Chairman of the Board and to the President
Mary Mento, Executive Secretary

## Undergraduate admission

John E. Benevento, B.S., M.S., Director
Robert A. Campbell, B.A., M.A., Associate Director
Mary Ann Mikosky, B.S., Admission Counselor
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Lesa Loritts, B.A., Admission Counselor
Eva Widger, Executive Secretary
Adele Olivi, Secretary
Nancy DeMartino, Secretary-Receptionist

Celia DiNello, Secretary
Patricia DeMaio, Secretary
* Rose Iantorno, Terminal Operator

### FINANCIAL AID

David DuBuisson, B.A., Director
Phyllis E. Antrum, B.A., Financial Aid Counselor
Evelyn Sherwood, Secretary
Beatrice Cordone, Secretary
* Nancy Virgulto, Secretary

## Athletics

**Athletic Director:** Joseph A. Machnik, Ph.D.
**Coordinator of Women's Athletics:** Deborah Chin, M.S.P.E.
**Athletic Trainer:** Robert Deobil, B.S.
**Director of Athletic Public Relations:** Frank Vieira, M.S.
* Peter Vander Veer, B.S., Sports Information Director
Leo Pacquette, Equipment Manager
Margaret Bertolini, Secretary
Barbara McGill, Secretary

### COACHING AND PHYSICAL EDUCATION STAFF

Thomas Bell, M.A., Head Coach, Football, Lacrosse
Deborah Chin, M.S.P.E., Coordinator of Women's Athletics; Head Coach, Softball, Volleyball
Robert Deobil, B.S., Trainer; Head Coach, Track, Cross Country
William Farrow, M.S., Head Coach, Men's Basketball; Physical Education
Joseph Machnik, Ph.D., Associate Professor of Physical Education; Director of Athletics; Head Coach, Soccer
Frank Vieira, M.S., Associate Professor of Physical Education; Director of Athletic Public Relations; Head Coach, Baseball
Donald Wynschenk, M.S., Assistant Professor of Physical Education; Director of Intramurals; Head Coach, Men's Tennis
* Kevin Breslin, B.S., Assistant Coach, Golf, Hockey

* Part time

* Robin Carrera, B.S., Assistant Coach, Football
* John Chernovetz, B.A., Assistant Coach, Football
* Barry Cunningham, B.S., Assistant Coach, Basketball
* Pasquale Elia, M.S., Head Coach, Women's Basketball
* George Jerome, B.S., Assistant Coach, Track
* John Kowalski, B.S., Assistant Coach, Soccer
* Steve Lane, B.A., Head Coach, Golf, Hockey
* Lynn Love, B.A., Head Coach, Women's Tennis
* Jack Maloney, B.S., Assistant Coach, Track
* Dean McKissick, B.S., Assistant Coach, Football
* Kevin Monahan, B.S., Assistant Coach, Football
* Frank Tomaselli, B.S., Assistant Coach, Lacrosse
* Joseph Tonelli, M.S., Assistant Coach, Baseball
* James Vacario, B.S., Assistant Coach, Football

## Development and alumni relations

John M. Lupton, Director of Development
Jeanne Perrone, Director of Alumni Relations
Lucille DeStefano, Executive Secretary
Janet Seymour, Financial Secretary
Sara Haddad, Secretary
Beverly Garville, Secretary

## Handicapped services

George A. Schaefer, B.S., M.B.A., Coordinator

## Personnel Office

James H. Shattuck, B.S., B.A., Director
Georgianne DeMaio, Secretary

* Part time

### SERVICES

Charles Caulfield Sr., Mail
David Gralnick, Head Mailman
Polly MacDiarmid, Switchboard Operator
Stephanie Magliola, Head Switchboard Operator
Irene Perry, Receptionist
* Dolores Board, Switchboard Operator
* Earl Walker, Mail

## Public relations

Scott W. Tilden, B.S., M.A., Director
Dolores D'Agostino, B.A., Administrative Assistant to the Director
Elizabeth T. Bennett, B.A., Director of Advertising
William P. Lazarus, B.A., M.A., A.B.D., Director of the News Bureau

## Security

Donald R. Scott, Director
Richard D. Baker, Assistant to the Director
Eldridge Hatcher, Security Supervisor
Arcadio Rodriguez, Security Supervisor
John A. Amato, Security Officer
Arthur P. Sheehan, Security Officer
Oscar J. Stanley, Security Officer
John B. Walton, Guard and Dispatcher
Ronald D. Whittaby, Security Officer
* Nestore Delmonte, Guard
* Theodore Kastancuk, Guard and Dispatcher
* Rosemarie Giannotti, Secretary
* Dorothy Kyles, Guard
* Douglas K. Jordan, Guard

* Part time

# Academic administration

## Office of the Provost

Alexis N. Sommers, B.M.E., M.S., Ph.D., Provost
B. Badri Saleeby, B.S.M.E., M.S.M.E., Ph.D., Associate Dean for University of New Haven at New London
George A. Schaefer, B.S., M.B.A., Associate Dean for Administration
Christian F. Poulson, B.A., M.B.A., Director of Student Affairs, University of New Haven at New London
Marion I. DePalma, Executive Secretary

## School of Arts and Sciences

Franz B. Gross, M.A., Ph.D., Dean
Ralf E. Carriuolo, B.S., M.M., Ph.D., Chairman of Humanities
Kee W. Chun, A.B., A.M., Ph.D., Chairman of Physics
Dennis Courtney, B.A., M.A., Ph.D., Chairman of Psychology
Peter J. Desio, B.S., Ph.D., Chairman of Chemistry
Caroline Dinegar, B.A., M.A., Ph.D., Chairman of Political Science
Bruce A. French, B.S., M.A., Coordinator of Foreign Languages
Thomas Katsaros, B.A., M.B.A., Ph.D., Chairman of History
Paul Marx, B.A., M.F.A., Ph.D., Chairman of English
Elizabeth J. Moffitt, B.F.A., M.A., Chairman of Fine Arts
H. Fessenden Wright, A.B., M.S., Ph.D., Chairman of Science and Biology
Donald Wynschenk, B.S., M.S., Chairman of Physical Education
Genevieve Lysak, Secretary
Margaret Bertolini, Faculty Secretary, Chemistry & Physics
Lucille Faccadio, Faculty Secretary, Political Science
Betty Bucar, Faculty Secretary, English
* Louise Allen, Faculty Secretary, Art & Music
* Cornelia Mas, Faculty Secretary, History
* Diane Jackson, Faculty Secretary, Sociology

* Part time

## School of Business Administration

Warren Smith, B.A., M.B.A., Dean
Gene F. Brady, B.S., B.A., Ph.D., Chairman of Marketing
John R. Coleman, B.S.E., M.S.I.E., Ph.D., Chairman of Hotel Management, Tourism and Travel
Wilfred Harricharan, B.S., M.S., Ph.D., Chairman of Managment Science
Kenneth P. Fox, B.A., Ph.D., Chairman of Public Administration
Marilou McLaughlin, B.A., M.A., Ph.D., Chairman of Communication
John Teluk, B.S., M.S., Chairman of Economics
Jeffrey L. Williams, B.S., M.B.A.; C.P.A., C.M.A.; Chairman of Accounting
Collette Foley, Executive Secretary
Lois Anderson, Faculty Secretary
Dorothy Berman, Faculty Secretary
Clarador Feldman, Faculty Secretary
Eleanor Roppo, Faculty Secretary

### DIVISION OF CRIMINAL JUSTICE

Richard E. Farmer, A.B., M.S., Ed.D., Director
Lynn Hunt Monahan, B.A., M.A., Ph.D., Administrative Assistant to the Director
Henry C. Lee, B.A., B.S., M.S., Ph.D., Director of Forensic Science
Kathleen D. Allard, Executive Secretary
Anne B. Callahan, Faculty Secretary

## School of Engineering

Konstantine C. Lambrakis, B.S.E.E., M.S.M.E., Ph.D., Dean
William S. Gere Jr., B.S.M.E., M.E.I.E., M.S., Ph.D., Chairman of Industrial Engineering
Richard J. Greet, B.E.E., M.S.M.E., Ph.D., Chairman of Mechanical and Materials Engineering
Gerald J. Kirwin, B.S.E.E., M.S.E.E., Ph.D., Chairman of Electrical Engineering
Ross M. Lanius Jr., B.S.C.E., M.S.C.E., Chairman of Civil and Environmental Engineering
Viola Dunnigan, Executive Secretary

Irene Asprelli, Faculty Secretary
Maria DeLise, Faculty Secretary
Veronica Miller, Faculty Secretary
* Lucille Lamberti, Faculty Secretary

## Graduate School

Gwendolyn E. Jensen, B.A., M.A., Ph.D., Dean
David Paelet, B.S., M.S., Ph.D., Associate Dean
Gilbert L. Whiteman, B.Ed., M.A., Ph.D., Associate Dean; Director, Executive Master of Business Administration program
Dorothy J. Martin, Executive Secretary
Mary Boeger, Admission Secretary
Linda Carlone, Secretary
Bethanne Gentile, Secretary-Receptionist
Allena T. MacDougall, Secretary
* Doris Baldwin, Admission Secretary
* Natalie Crotty, Receptionist for the University of New Haven at Danbury

## School of Professional Studies and Continuing Education

Ahmed R. Mandour, B.A., M.B.A., Ph.D., Dean
Irene North, Executive Secretary

### DIVISION OF EVENING STUDIES

Richard M. Lipp, B.S., M.B.A., Associate Dean
Delma Heuffman, Secretary
* Florence Poppendick, Registration Secretary
* Carol Pfenninger, Secretary-Receptionist
* Patricia Roxby, Secretary-Receptionist

### DIVISION OF CONTINUING EDUCATION

Muriel MacKay, A.S., Assistant Director

* Part time

### SPECIAL STUDIES

* L. Claire Cappiello, Secretary

### MANAGEMENT CENTER

Richard M. Lipp, B.S., M.B.A., Acting Director

## Library

Samuel M. Baker Jr., B.A., B.S., M.A., University Librarian
Edith C. Lissey, Administrative Assistant to University Librarian
Dorothy S. Lockrow, B.A., M.A., Associate University Librarian
Sharon Stevens, B.A., M.S., Assistant Librarian: Technical Services
Lorraine C. Burke, Library Clerk: Technical Services
Jane Joseph, Library Clerk: Technical Services
Elizabeth Kuchinski, Assistant to Catalog Librarian
Annette Greenhouse, Library Clerk: Technical Services
Patricia Taylor, Library Clerk: Technical Services
Charles E. Kratz Jr., B.A., M.A., M.L.S., Head, Public Services
Lillian B. Goldsmith, Assistant to Circulation Librarian
Kathleen Fanning, Library Clerk: Public Services
Charlene Shortell, Library Clerk: Public Services
Carol Depgen, Library Clerk: Public Services
Jessie Delehanty, Library Clerk: Public Services
Eric W. Johnson, B.S., M.S., Serials/Reference Librarian
Barbara B. Caine, Library Clerk: Public Services
Carol M. Harker, B.A., M.L.S., Documents/Reference Librarian
* Marie Keenan, Library Clerk
* Joanna Krol, Library Clerk
* Marie Miller, Library Clerk
* Maryann H. Dinneen, Library Clerk
* Rosemary Platz, Library Clerk
* Ann Thompson, Library Clerk
* Anna L. Hohl, Library Clerk
* Joyce C. McVey, Library Clerk

*Part time

## Student Records

Joseph Macionus, B.S., M.P.A., Registrar
Virginia Klump, Assistant Registrar
Frank A. S. Elliott, B.S., Systems Analyst for Student Records
Mary Burdick, Recorder, Undergraduate Records
Helen Carey, Transfer Credit Analyst
Ann Chernick, Secretary
Audrey Kurshner, Terminal Operator
Ellen Leuzzi, Secretary to the Registrar
Marjorie Manfreda, Recorder, Graduate Records
* Annabelle D'Amicis, Secretary
* Kathryn Tuttle, Secretary

# Business and Financial Administration

### TREASURER'S OFFICE

Frank G. Hull, B.S., Treasurer of the University
Frank Clifford, B.S., M.B.A., Assistant to the Treasurer
Elsie Calandro, Secretary

### BUSINESS OFFICE

Olga C. Griffeth, A.B., Director, Secretary of the University
Frank Clifford, B.S., M.B.A., Bursar
Mary Lou D'Addio, Accounts Receivable
Julie Hylwa, Accounts Receivable
Frances MacMillan, Accounts Receivable
Marjorie Deobil, Accounting Supervisor
Lois Earles, Payroll
Rose King, Accounts Payable
Anne Loin, Accounts Payable
* Helene Fillmore, Accounts Receivable
* Lois Ucas, Accounts Receivable

* Part time

### COMPUTER CENTER

Edward T. George, B.S., M.S., D. Engr., Director
Thomas Claring, Production Technician
Susan Hung, B.A., M.S., Systems Analyst Programmer
Cynthia Kranyik, B.A., M.S., Academic Operations
Christopher Morgan, A.S., Analyst Programmer
Raymond Pulaski, B.S., M.S., Manager, Computer Operations
Salvatore Votto Jr., B.S., Administrative Systems
Mark Weber, B.S., Systems Analyst Programmer
Roberta C. Peccerillo, Secretary
* Robert Schuster, Computer Operator

### PROCUREMENT, BUILDINGS AND GROUNDS

R.D. Byard, M.B.A, C.P.M., Director
Theodore F. Kunkel, B.S., M.B.A., Assistant to the Director
Helen Rothfuss, Executive Secretary
Anastasia Avgerinos, Administrative Aide
Harry Florentino, Supervisor of Maintenance
Reno Mercado, Supervisor of Custodians
Jean Pierre-Michel, Assistant Supervisor of Custodians
Sam Craft, Assistant Supervisor of Maintenance
Donald Wright, Assistant Supervisor of Maintenance (North Campus)
Anthony Ortiz, Receiving and Inventory Clerk
* Maureen Chase, Executive Secretary
* Pauline Downing, Central Duplicating Service
* Joseph Palumbo, Assistant Receiving Clerk
* Mary Yurczyk, Clerical and Central Duplicating Service

# Student Affairs Administration

## Office of the Dean

Michael W. York, B.A., M.A., Ph.D., Acting Dean
Dorothy I. Levitsky, Executive Secretary

*Part time

## Career Development

Charles A. Bove, B.A., M.A., Director
Marlene Wajnowski, Secretary

## Counseling

Michael W. York, B.A., M.A., Ph.D., Director
George H. Davis, B.A., M.S., Ph.D., Acting Director, 1978-79
Marilyn Eichler, B.A., M.S., Ph.D., Counselor
Ann Massini, Secretary

## Day Student Government

Clarice Sorcinnelli, Secretary

## Housing and Health

Theodore Kunkel, B.A., M.B.A., Director
Sheila Wade, B.A., Rathskellar Manager
Jon M. Fessel, M.D., University Physician
Eileen A. Quinn, R.N., Head University Nurse
Doreen S. Griffith, Secretary
* Lillian A. Traub, R.N., University Nurse

## International Students

Bruce A. French, B.A., M.A., Adviser

## Minority Student Affairs

Peter A. Rogers, B.S., Director

* Part time

## Veterans' Affairs

George A. Schaefer, B.S., M.B.A., Coordinator
Beatrice Cordone, Secretary

# Faculty

## Faculty Organization

### GENERAL COMMITTEE

| | |
|---|---|
| Chairman of the Faculty | Michael J. Wynne |
| Secretary of the Faculty | Donald M. Smith |
| Vice Chairman of the Faculty Senate | Michael J. Wynne |
| Chairman of the Board of Faculty Welfare | Caroline A. Dinegar |
| Vice Chairman of the Board of Faculty Welfare | Burton C. Staugaard |
| Secretary of the Board of Faculty Welfare | Peter J. Desio |

## Faculty Senate

| | |
|---|---|
| Chairman | Michael J. Wynne |
| Vice Chairman | Michael J. Wynne |
| Secretary | Donald M. Smith |
| **Chairmen of Senate Committees:** | |
| Academic Standards | Steven A. Raucher |
| Budget and Development | Joseph Chepaitis |
| Commencement and Convocations | Dinwiddie C. Reams |
| Curriculum | Michael J. Wynne |
| Faculty-Student Relations | Donald Wynschenk |
| Graduate | Dennis Courtney |
| Instruction | Ira H. Kleinfeld |
| Library | Robert J. Hoffnung |

## Board of Faculty Welfare

| | |
|---|---|
| Chairman | Caroline A. Dinegar |
| Secretary | Peter J. Desio |

## Sabbatical Leave Committee

| | |
|---|---|
| Chairman | Dinwiddie C. Reams |

## Tenure and Promotion Committee

| | |
|---|---|
| Chairman | Burton C. Staugaard |

## Secretary To The Faculty

Carol J. Munro

## Faculty 1978-1979

Arnold, Joseph J., Associate Professor, Industrial Engineering B.S., M.S., Southern Connecticut State College

Attard, Alfred E., Assistant Professor, Criminal Justice B.S., Queens College; M.A., Columbia University; Ph.D., Illinois Institute of Technology

Bechir, M. Hamdy, Associate Professor, Civil Engineering
B.C.E., Cairo University; M.A.Sc., University of Toronto; Sc.D., Massachusetts Institute of Technology

Beeken, Ramona, Assistant Professor, English
B.S., Southern Connecticut State College; M.A., Trinity College

Bell, Srilekha, Associate Professor, English
B.A., M.A., University of Madras; M.A., Ph.D., University of Wisconsin

Bradshaw, Alfred, Associate Professor, Sociology
B.A., Ph.D., Syracuse University

Brady, Gene F., Associate Professor, Management Science
B.S., University of Virginia; M.B.A., Wayne State University; Ph.D., University of Oregon

Brody, Robert P., Associate Professor, Marketing
B.A., Wesleyan University; M.B.A., University of Chicago; D.B.A., Harvard University

Brown, David, Professor, Psychology
B.S., University of Connecticut; M.A., Columbia University

Burns, Donald, Assistant Professor, Physical Education
B.S., University of Connecticut; M.A., Teacher's College, Columbia University

Carriuolo, Ralf E., Professor, Humanities
B.A., Yale University; M.M., Hartt College; Ph.D., Wesleyan University

Carson, George R., Associate Professor, Civil Engineering
B.C.E., City College, New York; M.S.C.E., Columbia University

Chandra, Satish, Associate Professor, International Business
B.A., University of Delhi; M.A., Delhi School of Economics; LL.B., Lucknow Law School, India; LL.M., J.S.D., Yale University

Chepaitis, Joseph, Professor, History
A.B., Loyola College; M.A., Ph.D., Georgetown University

Chun, Kee W., Professor, Physics
A.B., University of Pennsylvania; A.M., Princeton University; Ph.D., University of Pennsylvania

Cole, Carroll P., Professor, English
B.A., Principia College; M.A., The Johns Hopkins University; M.F.A., D.F.A., Yale University

Coleman, John R., Associate Professor, Public Administration
B.S.E., University of Connecticut; M.S.I.E., University of Massachusetts; Ph.D., University of Massachusetts

Collinson, John, Professor, Humanities
A.B., The Johns Hopkins University; A.M., Harvard University; Ph.D., The Johns Hopkins University

Costello, Francis J., Associate Professor, Industrial Engineering
B.S.M.E., M.S.M.E., Newark College of Engineering

Courtney, Dennis, Associate Professor, Psychology
B.A., M.A., Wayne State University; Ph.D., Ohio State University

Davis, George H., Associate Professor, Psychology
B.A., M.S., Ph.D., Yale University

Desio, Peter J., Associate Professor, Chemistry
B.S., Boston College; Ph.D., University of New Hampshire

Dinegar, Caroline A., Professor, Political Science
B.A., Cornell University; M.A., Ph.D., Columbia University

Dornenburg, Noreen, Assistant Professor, Humanities
B.A., Seton Hill College; M. Phil., Ph.D., Yale University

Dull, James, Assistant Professor, Political Science
B.A., Wilkes College; M.A., University of Pennsylvania

Dworak, Robert J., Professor, Public Administration
B.S., M.P.A., Ph.D., University of Southern California

Eichler, Marilyn, Assistant Professor, Criminal Justice
B.A., M.S., City University of New York; Ph.D., New York University

Eikaas, Faith H., Professor, Sociology
B.A., M.A., Ph.D., Syracuse University

Elting, Robert A., Associate Professor, Hotel Management
B.S., M.S., Florida State University; Ph.D., New York University

Farmer, Richard E., Assistant Professor, Criminal Justice
A.B., St. Anselm's College; M.S., University of New Haven; Ed.D., Boston University

Ferringer, Natalie, Assistant Professor, Political Science
B.S., Temple University; M.A., University of Virginia

Flaumenhaft, Frank, Assistant Professor, Management Science
B.S., University of Pennsylvania; M.B.A., New York University

Fox, Kenneth P., Assistant Professor, Public Administration
B.A., Columbia College of Columbia University; Ph.D., University of Pennsylvania

French, Bruce A., Assistant Professor, English
A.B., University of Missouri; M.A., Western Reserve University; M.A., Middlebury College; M.A., Harvard University

Frey, Roger G., Associate Professor, Industrial Engineering
B.A., Yale College; M.S., Ph.D., Yale Graduate School

Fryer, Johnnie, Assistant Professor, Political Science
B.A., University of Connecticut; M.S., Southern Connecticut State College; M.A., New School For Social Research

Gaensslen, Robert, Associate Professor, Criminal Justice
B.S., University of Notre Dame; Ph.D., Cornell University

Gangler, Joseph M., Professor, Mathematics
B.S., University of Washington; M.A., Ph.D., Columbia University

Gardner, Joan A., Assistant Professor, Fine Arts
B.F.A., University of Illinois; M.F.A., University of Illinois

George, Edward T., Professor, Industrial Engineering
B.S., M.S., Worcester Polytechnic Institute; D. Engr. Yale University

Gere, William S., Jr., Associate Professor, Industrial Engineering
B.M.E., M.S.I.E., Cornell University, M.S., Ph.D., Carnegie-Mellon University

Goodrow, Lloyd, Assistant Professor, Criminal Justice
B.S., St. Michael's College; M.A., University of State of New York; J.D., University of Connecticut

Gordon, Judith, Associate Professor, Sociology
B.A., Brandeis University; M.A., University of Michigan; Ph. D., University of Michigan

Greet, Richard J., Associate Professor, Mechanical Engineering
B.E.E., Rensselear Polytechnic Institute; M.S., Ph.D., Harvard University

Grodzinsky, Stephen, Associate Professor, Electrical Engineering
S.B., S.M., Massachusetts Institute of Technology; Ph.D., University of Illinois

Haberman, Ronald A., Assistant Professor, Industrial Engineering
B.S.A.E., Pennsylvania State University; M.S.O.R., Florida Institute of Technology

Harricharan, Wilfred R., Professor, Management Science
B.S., M.S., Ph.D., Cornell University

Harrison, Robert D., Assistant Professor, Political Science
A.B., Amherst; M.A., Columbia University; M. Phil, Columbia University; J.D., Yale University

Hayden, George, Assistant Professor, Criminal Justice
M.A., Northeastern University; J.D., New England School of Law

Hickey, Joseph E., Associate Professor, Criminal Justice
A.B., St. John's Seminary; A.B., St. Anselm's College; M.S., Central Conn. State College, Ed.D., Boston University

Hoffnung, Robert J., Associate Professor, Psychology
A.B., Lafayette College; M.A., University of Iowa; Ph.D., University of Cincinnati

Horning, Darrell W., Associate Professor, Electrical Engineering
B.S.E.E., S.D. School of Mines; M.S.E.E., Ph.D., University of Illinois

Howling, Robert T., Professor, English
B.A., Rutgers University; M.A., New York University; Ph.D., Pennsylvania State University

Hyman, Arnold, Associate Professor, Psychology
B.A., M.A., Brooklyn College; M.S., City College of New York; Ph.D., University of Cincinnati

Jensen, Gwendolyn E., Professor, History
B.A., University of Hartford; M.A., Trinity College; Ph.D. University of Connecticut

Jewell, Walter O., III, Associate Professor, Sociology
A.B., Ph.D., Harvard

Kakalik, John, Associate Professor, Marketing
B.A., Ph.D., Michigan State University

Kalma, Dennis L., Associate Professor, Science and Biology
B.A., Knox College; M.S., Ph.D., Yale University

Kaloyanides, Michael G., Assistant Professor, Humanities
B.A., Ph.D., Wesleyan University

Kaplan, Phillip, Professor, Economics
B.A., University of Massachusetts; M.A., Columbia University; Ph.D., The Johns Hopkins University

Karatzas, George, Associate Professor, Economics
B.A., Manchester University; M.A., Ph.D., New York University

Katsaros, Thomas, Professor, History
B.A., M.A., M.B.A., Ph.D., New York University

Kayiira, Lutakome A., Assistant Professor, Criminal Justice
B.S., Southern Illinois University; M.A., Ph.D., State University of New York at Albany

Kirwin, Gerald J., Professor, Electrical Engineering
B.S., Northeastern University; M.S., Massachusetts Institute of Technology; Ph.D., Syracuse University

Kleinfeld, Ira H., Associate Professor, Industrial Engineering
B.S., M.S., Eng. Sc.D., Columbia University

Kranyik, Cynthia, Instructor, Industrial Engineering
B.A., University of Bridgeport; M.S., University of New Haven

Lambrakis, Konstantine C., Professor, Mechanical Engineering
B.S.E.E., M.S.M.E., University of Bridgeport; Ph.D., Rensselear Polytechnic Institute

Lanius, Ross M., Jr., Associate Professor, Civil Engineering
B.S.C.E., University of Delaware; M.S.C.E., University of Connecticut

Lashgari, Malek K., Assistant Professor, Accounting
B.S., University of Tehran—Iran; M.Ph., New York University; M.B.A., University of New Haven; Ph.D., New York University

Lee, Henry C., Associate Professor, Criminal Justice
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**Transcript Request Sheet.** To be filled out and mailed directly to the school or schools from which transcripts are requested. This form may be photocopied as necessary. Most schools charge from one to two dollars for this service. Again, under the Family Rights and Privacy Act, this form must be signed before it is sent.



Request for college transcript.

I approve the release of an official copy of my transcript to the University of New Haven.

Signature _____ Date _____

TO: Registrar

_____
name of college or university

_____
address

_____

Please send an official transcript of my work to:

Dean of the Graduate School
University of New Haven
West Haven, CT 06516

Name _____

Date of Birth _____

Date of Graduation _____

Years attended _____

Current address _____

_____

## NOTES

University of New Haven, West Haven, Connecticut 06516—Tel. (203) 934-6321

# Graduate School Application for Admission

This application must be filled out and returned to the Graduate School, University of New Haven, West Haven, Connecticut 06516, along with:

1. A $15 nonrefundable application fee. This application cannot be processed unless accompanied by the fee.
2. Official transcripts forwarded by all colleges previously attended.
3. Two letters of recommendation. (Recommendation Forms are attached)

(Please Print or Type) Date .....

☐ Mr.
Legal Name ☐ Ms. .....
Last First Middle

Names different from above that may appear on academic records .....

Permanent Address ..... Telephone No. ( ) .....
Street Area Code

.....
City or Post Office State Zip Code

Mailing Address (if different from above) .....
Street City or Post Office State Zip Code

Birth Date ..... Social Security No. .....

Please indicate the program for which you are applying: .....

If you desire a concentration within that program of study, please indicate: .....

Where do you plan to attend most of your classes?

☐ at the West Haven campus? ☐ at an off campus center? (specify: .....)

Do you plan to study ☐ part time ☐ full time

Indicate the trimester you intend to start graduate study.

☐ September, 19..... ☐ January, 19..... ☐ April, 19..... ☐ Summer, 19.....

## Scholastic Record

List in chronological order all colleges and universities attended.

| Name of School | Location | Attendance From — To | Date of Graduation | Degree | Major Program |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Employment Record

List in chronological order all employment from present position to include the past five years.

| Position Held | Date | Name of Employer | Location | Telephone No. |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## References

| Name | Title | Organization |
|---|---|---|
| | | |
| | | |
| | | |

## Citizenship

Are you a citizen of the U.S.? ☐ YES ☐ NO (Country of citizenship _____)

If answer is no,

1. What is your visa classification? _____
2. Indicate date TOEFL (Test of English as a Foreign Language) examination was taken and remit scores with application

   Date _____ Place _____ Scores _____

**I hereby declare to the best of my knowledge that the information supplied is true and complete.**

. . . . . .

Signature of applicant Date

University of New Haven, West Haven, Connecticut 06516—Tel. (203) 934-6321

# RECOMMENDATION FORM

To be completed and returned directly to:

**UNIVERSITY OF NEW HAVEN GRADUATE SCHOOL**
**ADMISSIONS SECRETARY**

Name of applicant _____ Undergraduate college _____

Program to which applicant is applying _____

**TO THE RESPONDENT:** The above-named person has applied for admission to the Graduate School of the University of New Haven. Please provide us with your estimate of the qualifications of this candidate and of the reasonableness of his or her academic goals. It will help us if you indicate how long and in what capacity you have been acquainted with the candidate. If possible, compare his or her competence, motivation and intellectual ability with others you have known with similar goals. A candid, thoughtful statement, free of exaggeration will be most useful to us. Please use reverse side of this sheet when necessary.

In conformity with the Family Educational Rights and Privacy Act of 1974 we cannot regard letters of recommendation as confidential unless students waive their right to inspect such letters. If you wish the School to keep this information confidential, please have the applicant sign the waiver on the back of this page.

*over, please*

Recommendation, cont'd.

I: ☐ recommend strongly ☐ recommend ☐ recommend with reservation

☐ do not recommend this candidate for graduate study at the University of New Haven.

Name _____

Position _____

Address _____

Date _____

Signature _____

Since the applicant expects your response to be considered as part of his/her application, we plan to defer action on the application until hearing from you.

*Thank you for your assistance*

**WAIVER**

I hereby waive my right to inspect any letters of recommendation written to the University of New Haven Graduate School on my behalf by _____.

(Applicant's Signature) _____

University of New Haven, West Haven, Connecticut 06516—Tel. (203) 934-6321

# RECOMMENDATION FORM

To be completed and returned directly to:

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(Applicant's Signature) _____

University of New Haven
West Haven, Connecticut 06516

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